

THE DIETETIC^{AND} HYGIENIC GAZETTE

A Monthly Journal of Individual and Public Health.

EDITED BY JOHN B. HUBER, A. M., M. D.

Vol. XXX.

OCTOBER, 1914

No. X

EDITORIALS.

CONSUMPTION AND CIVILIZATION.

THE tubercle bacillus is an index by inversion of the real progress of the race. By it the claim of civilization to dominate human life may fairly be judged. Tuberculosis will decrease with the substantial advance of civilization, and this disease will as surely increase as civilization retrogrades. Is this statement much too broad? Is it untenable? Consider, then:

There is no phase of life which tuberculosis does not touch—nay, upon which it does not press with a most grievous, heavy hand. It claims, between infancy and old age, every seventh, and between adolescence and maturity every third or fourth, life—in some of our communities every other life. Every other adult negro succumbs to it.

Society's "submerged strata," which cannot free themselves from the grip of pestilent environment—the darkness, wretchedness, and starvation upon which the saprophytic bacillus propagates its teeming billions—yield victims far in excess of those claimed by all other infections put together.

Nor are the rich, in fancied security, any freer from the danger than were the gallants and the gentle ladies in Poe's dreadful tale, who thought by isolating themselves to escape the Black Death. For the beautiful laces and garments worn by the well-to-do and the pretty things worn by their children, and often got at remarkably low prices (for is he not a fool who does

not buy a thing as cheaply as he can?) are like as not worked at and bent over and coughed upon from dawn until midnight by sweat-shop consumptives. Thus much oftener than we imagine does the poverty of Lazarus make itself felt in the house of Dives.

There is scarcely a trade, or occupation, or business, or calling which does not, in varying degree, give up its quota of valuable lives. And the factory is even more productive of tuberculosis than the home for the consumptive workman, under conditions which have up to recently prevailed, has infected his fellow-workmen more than he has the members of his own family.

In literature and the arts how many precious lives have succumbed to this veritable captain of the men of death. Consumption has ever been "death's direct door to most hard students, divines, physicians, philosophers, deep lovers, zealots in religion." Who can estimate the loss in beauty, poesy, in intellectual treasures, and in all the sweetnesss and refinements of life, which this disease has inflicted upon us? How many an inspired genius, even before his powers have matured, has suffered its most untimely visitation!

The proverb goes, "Trokner Husten-Toder Trompeter"; nor has the sword ever been nearly as voracious of human life as has been the tubercle bacillus. And such scourges as cholera, the plague, small-pox, although they have been more gruesomely

picturesque in their ravages, have never been in the running with consumption.

An intensely practical spirit has come to be representative of our present-day civilization, and of this we are exceedingly vain. In the popular phrase, everything is centred in the question "Does it pay?" and whatever fails to come up to the price of money standard is eschewed contemptuously. To understand adequately this tendency one has but to contemplate, for so long as he can endure to look upon it, the characterization of Mammon which Mr. Watts has painted. It is, then, nothing short of astounding—the economic losses which we permit tuberculosis to inflict upon us; astounding how our shrewdness, our business prescience, has in truth a vision reaching no farther than the essentially obtuse angle the apex of which is the end of its nose. Tuberculosis is a disease entirely preventable—and by means extraordinarily simple, and of comparatively little cost. Yet, to state a single fact, it is costing the United States an annual loss exceeding a billion of dollars.

Thus, then, does this disease affect most intimately every relation in life, every aspect of civilization—the infant subsisting on impure milk; the child studying in unhygienic schools; the adolescent contending with the conditions peculiar to those years; young

men and young women aspiring to matrimony; the mother, in whom lies the destinies of the race; the man who should be sturdily accomplishing the world's work. Tuberculosis is pervasively concerned with our habits and customs, with our housing conditions, the sanitation of our cities, the regulation of child labor, and innumerable other details of existence. It has to do fundamentally with human evolution; with human heredity and preservation, humankind's course in the present life, its generations to come. It provides a subject much more worthy wise and sane legislative consideration "than all the many questions that make and unmake ministries." From whatsoever viewpoint one views this all-permeating matter, one must conclude that tuberculosis is indeed the executioner-in-chief fulfilling the natural law of the survival of the fittest.

Three papers on this supremely important subject of tuberculosis appear in the present issue of THE GAZETTE, by Dr. Mary E. Lapham, by the Editor of THE GAZETTE and by Doctor Arthur C. Jacobson. And our fourth paper is concerning a disease very nearly related to tuberculosis and which, with tuberculosis makes half the human death rate—that is, pneumonia. The reader, we are confident, will find none of this matter banal.

FEMININE POSTURE.

DR. MATHILDA K. WALLING, in a meeting of the Woman's Medical Society of New York State, defined two classes of bad posture: the congenital, which it takes years of careful study to overcome, and the acquired, which is not so difficult to remedy.

Correct posture is that in which, standing or sitting, correct muscular balance is maintained; thus is right heart and lung action assured. School children should be taught the great importance of standing well. Schools have been blamed for causing bad postures, because the children sit in seats not suited to them, leaning over desks without enough change of position and no exercise. In many cases the criticism is justified.

From the physician's viewpoint Dr. Walling approves the Montessori method of conducting a school; for by this system the children are allowed to move about and change their positions. But bad posture is usually the sign of muscular weakness and a child cannot be cured simply by being told to stand up straight. Regular courses of exercise are necessary. Clothing is a cause of poor standing and sitting positions. There is apt to be too much weight on the child's shoulders. His clothes drag him down. Shoes are another cause of incorrect postures. Physicians must become educators in these premises if many of the tendencies exhibited by the men and women of to-day are to be eradicated in the generation following them.

LEPRA AND LEPROSY.

DESPITE the great deal of disease-prevention literature which the medical profession has disseminated among the laity, in lectures, public health bulletins, popular articles and the like, there nevertheless remains a deplorable popular inability to discriminate between the various ways by which infections are contracted, and as to the relative virulence of infections. Measles, for example, is likely to be acquired by the briefest contact; whilst to become tuberculous there must be predisposition, and even then the contact with the infectious material must be intimate, frequent and prolonged for an implantation to take place. Again there are many infections, not particularly dreaded, which are much more virulent than leprosy, the fear of which latter disease we desire here to dwell on.

If the lephophobia which from time to time occasions emotional epidemics among our people, epidemics in which the most occasionless cruelty is displayed against the unfortunate sufferers from that comparatively innocuous disease, if such lephophobia could be converted into a wholesome and effective dread of the Great White Plague, for example, tuberculosis could be made as rare as smallpox. And if for lephophobia we could read syphilophobia, how infinitely more worth while would be the potency in such a fear, properly directed against the Great Black Plague.

Bacteriologists generally agree that leprosy is way down in the infectivity grade. Though tuberculosis, as we have observed, is not easily communicable, leprosy is much less so. The infectiousness of the leprosy bacillus is of a low character. The bacillus lepra resembles that of tuberculosis in many respects, differing from it, however, in that it grows with difficulty on artificial media and is much less, if at all, pathogenic for the lower animals. "There can be little objection in a country such as ours, where leprosy shows slight tendency to spread, to give a clean leper his freedom. There is no more danger from a leprosy patient of clean

personal habits, who exercises care concerning the discharges from the lesions, than there is from a discharging case of tuberculosis of the glands of the neck." And probably not five per cent. of the tuberculous have such discharging glands.

One great reason for the irrational popular lephophobia is that the modern disease is confounded with the biblical accounts of it. But in ancient and mediæval times the syphilides, the skin, bone, joint and gland lesions of tuberculosis, psoriasis and pretty much any persistent skin lesion were deemed leprous. In this relation, therefore, an excellent paper by Dr. H. W. Hill, is most informing. Hill considers that modern leprosy should never be thus called, but should be designated lepra. Such lepra shows its skin lesions in, not under the skin, enlarging slowly if at all, the enlargement in most cases being far too slow to notice in a week or even in two. Tsaraath, the biblical leprosy, showed its lesions *under*, not in the skin, if the lesion were in the skin, but failed to enlarge noticeably within a week or at most in two weeks, the suspect was released. The two diseases Hill therefore holds to be *converse* as regards these, the essential points of diagnosis of tsaraath. "The infectiousness and incurability of tsaraath, supposed to aid its identification with lepra, are nowhere mentioned or implied in the Hebrew accounts. This ancient belief in the identity of the two diseases has undoubtedly added much to the sufferings of the modern leper and should be dispelled as soon and as emphatically as possible. Every effort should be made to point out that lepra is produced by a well-known germ, belonging to the tuberculosis group; and is in its clinical effect a second cousin, so to speak, to tuberculosis, but much less infectious—a disease to be supervised and prevented from spreading, of course, but calling for no panic stricken flights from its neighborhood and no especial hardships or cruelty to its unfortunate victims."

THE HELPFUL UNFIT.

ONE of the newest and most propitious experiments making for the solution of the problem of industrial waste is the chance afforded feeble or partially disabled or convalescent people in hospitals and asylum workshops to support themselves by doing useful work. Both in this country and abroad there have been successful attempts to find work for people unable under the present system of production to gain all they need for a livelihood. The prospect is promising that knowledge will be gained which will mean changes in charity methods sufficient to encourage self-reliance and efficiency in many disheartened workers.

Thus far such experiments have proved the decided money value of such work, done despite obstacles. Supplies worth \$40,000 were produced the summer past by men patients on the hospital farm at the State colony at Gardner, Mass. A pottery established within two years in connection with a hospital on the Pacific Coast has enabled tuberculous girls to pay their expenses under sanatorium treatment and to learn a self-supporting trade. The men admitted to the Otisville Sanatorium of the New York City Health Department are required to do such work in and about the institution as they are fitted for, and as is salutary for them; and they are much the better off thus occupied. This is much better than twiddling thumbs and abusing the establishment. Five patients in an Eastern hospital last year made and sold \$6,000 worth of pottery. At the Bedford Sanatorium for Consumptives of the Montefiore Home in New York vegetable gardening is done by the patients suffi-

cient at least for the needs of that superb institution. Feeble minded patients under Dr. Fernald and Dr. Tuttle at the schools and hospitals at Waverley, Mass., under Dr. Laehr at the Hans Schoenow Hospital in Berlin, Germany, and in other places where crafts work has been instituted, have made an excellent showing. At Saranac Lake the patients do superb work in photography and the like.

Such workers are not expected to be trained in this way for success in the more skilled trades, but certainly they can be taught the more simple arts of hand-weaving, metal-working, wood-carving, leather-working, pottery-making and cement-working. Men and women thrown out of employment in a particular trade because of some special unfitness are by no means of no service. The unfeeling should have no right speaking of them as human derelicts or undesirables or fit only for the scrap heap. The problem is to find and organize the sick or discarded workers, teach them work that they can do and so by grading work to their ability restore to them their self-respect and their sense of having a recognized place in society. Those who have been studying the experiments under way are predicting a system of labor supplementary to the present system of regular industries which involves so much waste. The burden of supporting the sick and idle will become too heavy, they assert; and then will be devised some general social policy of training the imperfectly fitted people, now often allowed to throw away their lives in sadness and neglect, to use what productive power they have for themselves and the community in which they live.

Whoever supposes that the power of imagination is merely a mental emotion, which may to any extent, without corresponding changes in the physical functions, labors under a mighty mistake. Suggestions by others of the ideas of health, vigor and hope are influential with many people

for restoring health and energy both of mind and body. Having then such an effective power to deal with the great desideratum has been to find the best means for regulating and controlling it, so as to render it subservient to our will for relieving and curing diseases.—*James Braid.*

OUR ALASKAN INDIANS.

MOST of the natives of southeastern Alaska live near the pale faces—trade in the same stores, work in the same mines and canneries. The two races intermingle freely in public places, settling amicably their own race problem without help (or interference) from outsiders. The Indians are by nature very sociable, indulging freely in feasts, dances and other ceremonies, coming together for these occasions in hundreds from all sections.

All this has, however, the one disadvantage that it leads to the spread of "catching" diseases not only among their own people but also among the whites. These are consumption, measles, grippe, whooping cough, diphtheria and eye troubles. As all of these, except perhaps the eye diseases, were brought to Alaska originally by the Whites, they have been a heavy misfortune to the Indians; especially because any infection, when it visits a race or a people for the first time, is much more than ordinarily virulent among them.

Therefore our United States Public Health Service makes it plain, in its reports, that unless proper medical and sanitary relief is extended to the Alaskan Red Man in the near future, the spread of the diseases of civilization among them will in time result in the extermination of that now much endangered race.

And the Bureau of Education in Alaska grasps fully this alarming situation and is working heroically to prevent the excessive mortality among those Indians. At present its resources are necessarily limited and inadequate to the demands made upon it; this is a fact which should appeal to the American People, who ought to feel a great and a natural responsibility in the matter.

A part of the appropriation for the education of Alaskan natives is being used for the maintenance of three improvised hospitals in schoolhouses and for salaries of teachers and nurses. Lectures are given on various diseases and on sanitation; and bulletins are distributed for the guidance of field workers.

A PEACE PRAYER.

O GOD, who hast made of one blood all nations of men to dwell on all the face of the earth, and Who, in Thy Holy Word, has taught us that One is Our Father, even God, and that all we are brethren;

We pray Thee in this dark hour of international strife that Thou wilt open the eyes of the people, and those who in Thy Name are entrusted with the authority of Governance, to see and understand their right and true relation to Thee, and through Thee to one another.

Teach them by Thy Spirit that hatred and violence are not strength, but weakness; that the true safeguarding of a nation is not to be found in weapons of war, but in those eternal principles which make for righteousness and truth and brotherhood and peace.

Give to those who shall suffer in the war which is raging now the consolations of Thy grace. Heal the sick; comfort the wounded; minister to the dying; and bind up the broken heart.

Bring, we pray Thee, to a speedy end this international strife; and hasten the time when peace shall flourish out of the earth, and all shall dwell together in unity and love, and war shall be no more. We ask it in the Name of Our Saviour Jesus Christ. Amen.

This prayer was authorized by Bishop David H. Greer to be made in Episcopalian Churches. Its essence will purely be appreciated by readers of all religions, of whatever denomination or of no denomination whatever. By reason of the present epic tragedies to which it is related, we beg leave to print it in a secular Journal.

MALARIA AND POLITICS.

OUR Minister to Greece, appointed some months ago, after some little exercise of that office, suddenly, in June last, gave up his job, renounced the land that bestowed it on him, and faced all Europe in behalf of Albania and her woes. It has been suggested that this singular behavior was largely by reason of a touch of the malaria which seven-tenths of the Grecian people are suffering and which permeated untowardly his puritanic, New England temperament. Here is an explanation not without plausibility; and which may account also for some recent utterances of an ever-strenuous statesman, who is now in addition disobeying a very wise doctor. The conduct of both these gentlemen, and possibly also of many others in American public life, who may be similarly afflicted, ought to be made allowances for in the kindly light of history. The conqueror of Greece many centuries ago was not so much the Roman or any other armed foe, as that great tyrant which even now holds half humankind in its enervating grip—malaria. The influence of this disease has undermined the mental stamina and the glorious virility not only of innumerable individuals but also of whole

ethnic entities. It is not recorded to have prevailed among the Greeks in their Homeric Age; nor when Sappho sung, and Pericles ruled and Phidias wrought; when Hellas bore the race the rest of mankind have since despaired of emulating. Any word indicating malaria seems to have appeared first in "The Wasps" of Aristophanes—several years previous to which play the Athenians had been fighting on the Island of Sphacteria, to-day, as then, one of the most malarious spots in the pestilent Levant. Then a new term had to be invented—*melancholia*—to indicate the mental effect of malarial fever, along with the black bile and the enlarged spleen. Next came the Eastern conquests of Alexander, for which dreadful old Mother India amply avenged herself. For with the return of the infected Greeks (including Alexander, who is historied to have died of it) began the epic physical and psychic degeneration of that once so magnificent people. Then (observes W. H. S. Jones, in his *Malaria and Greek History*, Manchester University Press) "did patriotism decay and lofty aspirations cease to stir the hearts of men; then did the erstwhile noble oratory in the areopagitica give place to puerile dissatisfactions and to ignoble querulousness."

The hypnotic condition and the phenomena associated therewith are purely subjective, and originate in the nervous system of the patient. The fixation of a brilliant object, so that the palpebral muscle becomes fatigued, and the concentration of the attention on a single idea (as of sleep) brings about the sleep. The subjects can even bring about this condition in themselves, by their own tension of mind, without being submitted to any influence from without. In this state the imagination becomes so lively that every idea spontaneously developed or suggested, by a person to whom the subject gives this peculiar attention and confidence, has the value of an actual representation to him.—*Bernheim*.

Hypnotic sleep has many helpful influences. It is really a change in the equilibrium of the brain and mental faculties and produces great modifications in the memory and in sensibility. Life is indeed a long series of habits to which we are accustomed; hypnotism changes these habits which in a normal condition we do not try to modify, and on awakening, all memory of the change is gone, though its effects may remain. Now oftentimes the nervous system becomes fixed in certain disagreeable or dangerous habits, and the upsetting of these, the uplifting of the mind from the rut, is of great service. In the sleep of hypnotic speech, action, methods of thought, all are changed, there is a cerebral rest and beneficial results often follow.—*Pierre Janet*.

ORIGINAL ARTICLES.

THE TUBERCULOSIS OF WELL PEOPLE.

BY DOCTOR MARY E. LAPHAM, HIGHLANDS CAMP SANATORIUM, HIGHLANDS, N. C.

I HAVE under my care to-day six men who up to the very moment of their final breakdown were well and working with undiminished capacity. They consulted their doctors for the relief of various symptoms—for a bad throat, malaria, indigestion, biliousness. When the true condition of the lungs was discovered these men could not believe that there was anything seriously wrong, and yet in each case the lungs were so extensively infiltrated that the question of recovery required careful consideration. When asked how long they had been sick, they replied, "Not at all." One man said, "I've never felt better in my life, and am just as able to do a day's work as I ever was," and to-day all of these six men persist in saying that they feel perfectly well.

These men were all living under very favorable circumstances. They were abundantly fed, not overworked, in easy financial circumstances, free from all vices, were in no way dissipated, and lived in a climate encouraging out-of-door life for the greater part of the year. These cases of tuberculosis of well people have played so prominent a part in my work for the last few years that I have formed the habit of regarding tuberculosis patients as more largely derived from the ranks of well people than we have hitherto supposed. We are accustomed to regard the resistance of the individual as of equal importance with the virulence of the infection, but I see day after day people in the very best ranks of life and in apparently vigorous health and in the enjoyment of full working capacity come crashing down all at once with tuberculosis in a most advanced stage. My patients are not drawn from crowded tenement districts, none of them have suffered the privations of poverty, and life has offered them all opportunities and promises of suc-

cess. They sometimes remind me strongly of certain streets in Vienna, where in cellars beneath the ground, with damp walls reeking with green mould, the conditions of life are so horrible that the very bones soften, but tuberculosis is not necessarily there. Above, in well furnished rooms, flooded with light and sunshine, children may be dying with tuberculosis, but below, in the unspeakable horrors, there is none. Why is this?

My experience has taught me that good health is no guarantee against tuberculosis. On the contrary, it seems to offer a shelter behind which the enemies serenely carry on their work of destruction in perfect security and entirely unsuspected, because there is no manifestation of ill health to suggest their presence. In a way ill health may possibly be a protection against tuberculosis, because in searching for the reason for this ill health, a tuberculous process may be discovered before it is hopelessly advanced, while with perfectly good health, this process may advance and escape detection until it is too late.

If at the very start tuberculosis always produced some marked impairment of health, it would not be the dangerous disease that it is. It is because tuberculosis does not necessarily produce any immediate bad effect upon the health that it is so terribly dangerous. Death from tuberculosis in a large majority of cases is due to failure to discover the danger in time, because it is not looked for. Lack of manifestation means lack of detection, and delayed diagnoses mean death.

The medical profession is more or less helpless in these cases. We cannot go to a burly man and insist upon examining his lungs, nor can we say to the successful lawyer or business man, "Here, you seem perfectly well, but it is possible that you are

in great danger. Let me examine your lungs and see if you have any tuberculosis." They would think we were crazy, and so would the parents of robust children that come romping and tearing through the house in the full vigor of animal health. "What," the father would say, "examine my boy? Why, look at him. Isn't he the very picture of health?" How shall we convince these parents that it is precisely in the ranks of well children that the tuberculosis victims of ten, twenty or thirty years from to-day are being prepared? We may convince them that science has indisputably proven that all children are infected by tubercle bacilli by the time they reach maturity. They are quite willing to admit this as a general principle, and to be faintly interested in it as a scientific truth, but that this fact has anything to do with the health of the football player is beyond their comprehension. They cannot be made to understand that the seeds of danger are sown in every child and that no man can say in which of our children these seeds will develop.

We have two undoubted facts of the greatest importance to consider. First, every child is infected with tubercle bacilli; second, what is this infection doing? In order to prevent tuberculosis, we must first of all be able to answer this question. If the infection remains harmless, the child is safe. If it does not, then how shall we detect this beginning of disaster at the earliest possible moment? The answer seems perfectly plain, perfectly evident, and is so simple that it is hard to understand why it should not be immediately appreciated and carried out. The only way to discover tuberculosis in time is to look for it periodically, and to regularly satisfy ourselves that our children are in no danger from an infection inevitably acquired. Since we can in no way avoid this infection of our children, the best that we can do is to have them examined regularly by a competent specialist, so that we may detect the development of danger and arrest it. It is a sad paradox that the sickly child whose infection manifests its dangerous characteristics at an early age, so that it is detected and arrested, offers a better guarantee for freedom from tuberculosis in adult life than its healthy brother, who never gives any occasion for examination. Under the cover of good health, the robust boy goes on through school and college life, enters business,

marries and finally, when it is too late, the concealed story of all these years of un-availed opportunities for safety, becomes apparent.

A typical case, and one that happens every day, is that of a young man brought up in the midst of luxuries and in the enjoyment of perfect health. An athlete through all his school and college days, he was just making a brilliant success in the financial world, when one day under the strain of nervous excitement, he collapsed. The horrified physician found both lungs irretrievably injured, but, with little or no hope, the patient was rushed to the mountains and every effort made to induce recovery, but in vain. Suppose the parents of this boy had had him regularly examined by a competent specialist; suppose the disease had been discovered in time. This is the keynote of all our future tuberculosis work; regular examinations of all our children and youths in order to discover the very first beginnings of disaster. This examination cannot be made by the eye and ear alone, nor by the microscope, nor by an untrained mind. The beginnings may be characteristically opposed to the causation of altered breath sounds in the lungs, so that the threads of infiltration may weave their way throughout the lungs until their destruction is seriously threatened, without the ear being able to detect the existence of these dangerous processes. In these cases we must have an X-Ray examination. No reliance whatever can be placed upon a negative report of sputum examination, because tubercle bacilli may be absent from the sputum in very advanced cases, and because our knowledge of the tubercle bacillus is so woefully inadequate that we are unable to detect its presence except under one form of manifestation.

Before we can contemplate the elimination of tuberculosis we need to have more scientific knowledge concerning it. Our ignorance is as appalling and as universal as the extent of the infection. Before New York City spends another four million dollars on a hospital for a disease which it knows nothing about, an adequate endowment for scientific research should be made, in order that we may know what this disease is that is costing New York City alone over two million dollars a year. Why is it so different from all other diseases?

To-day our work is based on ignorance. We know that tubercle bacilli are often present in the sputum of tuberculosis vic-

tims, and all our work is based upon this single fact. We do not know whether or not tubercle bacilli can live outside of the human body. We do not even know the life history of tubercle bacilli, and yet the United States is spending over twenty million dollars a year combating an enemy of which it knows nothing. Every hospital, every sanatorium, every bed, all district nursing, all milk and eggs devoted to tuberculous victims are confessions of incompetency, of inability to prevent. The final stage of tuberculosis is being well managed. We are striving with might and main to induce recovery and to relieve the suffering of these patients, but we are making no precise effort to prevent the necessity for these ministrations. We are allowing our people to go on until they fall by the way, and then we spend every dollar that we can get to take care of them. The economical plan is to prevent the possibility of delayed diagnoses by regular examinations. The maintenance of a high standard of resist-

ance, freedom from all unhygienic and debilitating factors, the living of a sane and moral life and the enjoyment of good health are all favorable influences against the development of this universal infection, but they are only favorable influences and they by no means guarantee against failure in adult life. Tuberculosis begins in childhood. We must prepare the safety of our coming adults by carefully examining our present children. While unhygienic, depressing factors favor the development of tuberculosis, their absence is no indication of safety. Our cry to-day is not so much for money, as for brains—as for someone to gather up the work now being done in European laboratories and to present it to us in such a way that we can comprehend its full significance. The day is coming when the taxpayer will need to be as sufficiently protected against tuberculosis as the victims themselves. The only way to prevent tuberculosis is to know something about it.

THE VALUE OF TREES TO CITIES.

THERE is a New York Tree Planting Association, and Dr. Stephen Smith is its president. Dr. Smith agrees with the poet Pope who extolled trees which "furnish in summer shade, in winter fire." More than that man's very life on this planet depends upon the trees, which absorb the poisonous carbon dioxide which man exhales and in return pours into his lungs the exhilarating and vitalizing oxygen secreted by its leaves. The tree regulates the temperature of the air in which we live by having itself a fixed temperature of 54° F. The grateful shade of trees on a hot summer's day and the comparative warmth of the forest in the coldest winter's day is due in a degree to the arboreal temperature. Therefore, if city streets were filled with vigorous trees we should have cooler summers and warmer winters.

And on hot days the tree sprays into the air an immense amount of water—32,000 gallons for a tree of full size and leafage.

Here is an inestimable cooling process. And such a tree has in foliage the equivalent of five acres of grass land—a fact further suggesting that a tree standing by our dwellings in the city and lifting its foliage in the air, story above story, would bring to every window which is passed acres of park scenery. In the hot summer days and nights it would purify the air entering the chamber and cool it with a delicious moisture. Finally the tree can absorb and thus remove from the air the emanations from the street and from putrifying waste matter. In this respect trees are the scavengers of the air and protect us from "filth diseases."

It should be added that trees are valuable in that they provide homes for birds which, besides giving pleasure by their song and their appearance, makes for sanitation. The sparrow, for example, is the mouse of the air; and they in the aggregate eat up a great deal of waste which if allowed to putrify, would endanger human health.

THE ELIMINATION OF TUBERCULOSIS.

BY JOHN BESSNER HUBER, A. M., M. D.

My friend and colleague, and noble champion in the anti-tuberculosis fight, Dr. Mary E. Lapham, in a fine article in the *New York Evening Post*, quoted a paper of mine in *Harper's Weekly* that the tubercle bacillus is the essential, specific cause of tuberculosis and that, if all sorts and conditions of men and women would combine to help the doctor in preventing the spread of this germ we could eliminate the disease (consumption) from human experience. I had written also that "Tuberculosis is not only a doctor's affair, but is also the most tremendous economic and social degeneration in existence." Dr. Lapham considered these ideas of mine pretty far fetched; so, in extenuation of them I wrote in *The Evening Post* the following:

Dr. Lapham and I, however divergent in our ideas of getting there, have our ideas on the same goal. The tubercle bacillus is indeed the specific cause of tuberculosis; there is no tuberculosis where the germ essential to the disease does not exist. But there are two elements in the evolution of consumption: the specific cause, the germ; and the predisposition, the state of the body by which it becomes a soil for the bacillus. The tubercle bacillus (I refer to the human type) cannot multiply outside the human body except under laboratory conditions. It is not (in the large aspects we are considering) a notable danger to humankind when contained in human excreta; the danger is mostly from human sputum.

CHILDREN RARELY BORN TUBERCULOUS.

I think children are rarely born having the tubercle bacillus in their bodies, although all too many of them are born with vitiated tissues that are congenial to the growth of this germ. That infants and children become infected with the bovine tubercle bacillus is well recognized, and this situation is now being so conscientiously coped with that I do not think it need enter into the general problem. And

I do not believe that tuberculosis in the other creatures mentioned by Dr. Latham is transmitted to humankind to the degree that we need consider it in this relation. In short, the consumptive's sputum is the main granary of human tuberculosis. And the gist of the matter lies in this: that the tubercle bacillus is the index to the fact, the nature, and the prevalence of the disease. The vital point for the layman to grasp, and then to make a part of his religion, an article of faith—absolutely undogmatic (though my colleague writes of my "dogma"), because nothing can conceivably be more demonstrable—that *the tubercle bacillus can get no implantation in a healthy body; for it the healthy body is stony ground*; this germ is a miserable saprophyte, depending for its subsistence, growth, and multiplying on dead, or devitalized, or sapped tissues.

That is why tuberculosis is a disease of the poor, of the submerged, a disease developed in sunlessness, cold, starvation, misery; in the overworked, exhausted, anxious body (for what is more predisposing, more sapping, than the anxious mind), and in the body devitalized by previous or concomitant diseases, of which alcoholism is preminent. Wherefore I have ever maintained that doctors, having demonstrated beyond peradventure the causes of tuberculosis and how it can be prevented, having clearly shown the way, it is "up to" the rest of civilization to work with the doctors in the altogether practicable, though epically difficult, business of vanquishing once and for all the Captain of the Men of Death.

Why difficult? Here are some reasons why:

WHERE THE TARIFF COMES IN.

Think of a tariff that put an average tax of 42 per cent. on the necessities of life. Consider what Dean Henry Wade Rogers has written: "We all know that, no matter

what may be the profits which come into the treasury of a Trust, the wage paid is the prevailing rate, the market price. The tariff has made the "Pittsburgh millionaire" and it has also made the Pittsburgh laborer. What the latter's condition is the Pittsburgh Survey discloses. The consideration shown to the workingman is seen in the provisions of the Payne-Aldrich Tariff. By that act he is taxed 75 per cent. on his woollen suit, 12 per cent. on his shoes, 71 per cent. on his stockings and underwear, 50 per cent. on his cotton shirt, 78 per cent. on his woollen hat and gloves. The dinner pail he carries is taxed 45 per cent. The stove in his home and the pots and kettles are taxed 45 per cent. The common crockery on his table is taxed 55 per cent., his knife and fork 50 per cent., and his spoon 45 per cent. The window glass in his house is taxed 62 per cent., and there is a tax on the lumber or the brick with which the building is constructed, and on the paint and the wall paper used in its finishing. The food with which he makes his frugal meal is taxed, the sugar he uses being taxed 54 per cent.

We doctors tell the poor that in order to get well of their consumption they have to eat abundantly of pure nutritious food, part of which must be half a dozen fresh eggs a day! What brute has ever been so vile as the human being who corners the food market? Those who sell fowl putrefied from storage several years back! Think of millions of eggs being held up for top prices while the poor are sold "rots and spots" (rotten eggs passed through sieves so that chick embryos three-quarters of an inch long shall not get into the stenching mess). And, when Christ's poor are treated like that, people have the Olympian nerve to speak of ours as a Christian civilization!

Then there is the ghastly inhumanity of gauging human labor by a law of supply and demand—a law natural only in so far as it is evolved out of human greed and human meanness—of valuing labor as one does lumber or pork or junk.

Tuberculosis is neither a hereditary nor a family disease—but a house disease, contracted chiefly in unhealthful tenements and workshops. A decade ago, when the idea of model tenements for the poor was launched doctors working among the tuberculous rejoiced; for here, it was felt, would be a most potent agency against the disease. But the model tenement of to-day is

not for the poor—not in New York nor in Chicago; and Mr. James Bryce says it is not for the poor in London.

Nearly ten years ago, with what strength and clarity there was in me, I set forth such things as these in my book, "Consumption and Civilization"; things my colleague, in your columns, gives the impression—all most unwittingly—that I have never considered!

A preacher, on Tuberculosis Day a year ago, propounded the question "Does God Fix the Death Rate?"; and he nobly answered himself, that God does *not* fix the death rate. His God was not that kind of a god; his Providence no such providence. Man fixes the death rate by the war (industrial or with ordinance); the famine and the pestilences he makes, and by the same token, these unholy things are man-preventable.

WHO, THEN, FIXES THE DEATH-RATE?

Who, then, does fix the death-rate?

Those theologians, now rapidly diminishing in number, who ignore the demonstrated facts of preventable disease and seek to perpetuate the mediæval superstition that infections are the Almighty's merited scourges; those laymen who consider they are not their brother's keeper and who disparage a tuberculosis propaganda as of no personal concern to them; legislatures which give millions of the people's money for schemes that so frequently turn out crooked, when they will not give a thousand to health departments, for fighting a communal disease that destroys 10,000 lives a year—27 a day in one city alone; venders of patent medicines (mostly alcohol) and consumption cures, nostrum fakers who fleece their victims until the latter have passed far beyond the incipient stage in which physicians could have helped them; a "league for medical freedom," organized to prevent the wise centralization and co-ordination of health activities; those who overwork women and children in factories and are responsible for sweat-shop atrocities; those employers who require men to work at dangerous trades under intolerable conditions (some industries hold a consumption death-rate above 80 per cent.); those faith-healers and miracle-mongers who would blind the sick to the facts of disease until no cure can be done. Here is an army, having no conscience and owning no religion, that fix the death-rate, which competent physicians, sanatorians, and

humanitarians are trying—against such titanic odds—to lower.

I hereby earnestly implore the laity to be henceforth on the side of those forces, that are bringing down the death-rate instead of training with malign battalions that are in the business of sending it up.

Dr. Latham is right. Our civilization has been most perversely leaving the brink of a frightful precipice unguarded while at the bottom are we doctors, Dr. Latham and the rest of us, helping to restore what few we can among the hosts that have fallen into the depths below. And though thousands have been helped and many fully restored, every third or fourth adult white and every other adult negro among us could not be helped and has succumbed untimely.

Well, what's to do; are we going to keep on standing for all this?

Goethe was told that a certain situation "must be so"—there was an immense authority and custom in favor of its being so—it had been held to be so for a thousand years. To which he answered: "But is it so; as it so for *me*?"

Lister, as a student in surgery, was told that putrefaction in wounds was due to the oxygen in the atmosphere; and there was no other way but that people had to die most horribly of gangrene, in fetid hospitals. But all this did not suit Lister; it was not so to him. And by his initiative humankind was freed of such conditions, that Dr. Wrench, in writing about them, warns the squeamish reader to leave off with the beginning of the description and go on to the next chapter of his book on Lister. To-day—a short generation after—we are amazed and disgusted at a civilization that would placidly endure such conditions.

The Panama Canal, oof which Balboa dreamed, and of which Charles V was prescient, could never be built, declared Humboldt and Froude, because the isthmus was about the rottenest pest-hole on the globe; and De Lesseps' honorable failure was in large measure due to that fact. But all this did not daunt Gorgas; it was not so to him. And he forthwith made a canal possible—be assured it could never otherwise have been built—by transforming that region into a veritable health resort, with a mortality rate only two or three American communities can get under, and which is the despair of most others.

TUBERCULOSIS CAN BE CONQUERED.

Tuberculosis can be eliminated from human experience; all we have to do is to de-

termine not to stand for it. A century ago he who would have said such a thing about smallpox would have been declared fit only for a madhouse. For smallpox was decimating cities and wiping out whole towns and villages. The smallpox conditions of those days did not satisfy Jenner; so he went to work to get rid of that pestilence. And they called him mad, and a lot worse. And yet how practically obsolete is smallpox to-day; in 1912 just two smallpox deaths among some five million people! And the method of getting rid of tuberculosis is simpler (though in practice the task is confessedly titanic), because we don't even know the germ of smallpox, while we have the altogether adequate knowledge of the germ of tuberculosis I have outlined, and know precisely how to cope with it.

Is then the prophecy unreasonable that our posterity a century hence will read with contempt and abhorrence of a civilization so stultified that, having the clear knowledge to prevent it, it continued to be content with so loathsome a thing as consumption?

Much has been done admirably by individual altruists, by societies, and by Governments, against tuberculosis. But the kind of work that has thus far been done will never completely eradicate the disease, because it does not deal adequately with the basic evils by which the Captain of the Men of Death does his gleaning.

And yet we are getting on. Conditions are not nearly so bad as they were a decade ago. While the rots and spots may still remain above ground, we have nevertheless (at last there is some real statesmanship in Washington) got the detestable tariff reduced from an average of 42 per cent. to an average of 26 per cent.; for all that it is still the miserablest laurel ever set on Mammon's brow. . . . And we are somehow coping too with the Captain of Industries who bloodsweats his millions out of the poor, by demanding, and progressively getting, the living wage.

And if we could but unload ourselves of the charity broker, the charity politician, and the philanthropist who talks about "human derelicts" and "undesirables," we might be able to house the poor, the really poor, in wholesome tenements—a hundred model tenements for every one such now existing—and all conducted on a frankly business basis.

One must see how the tuberculosis problem is beginning to engage the considera-

tion of discerning statesmen, who grasp the idea that all good government exists primarily for the maintenance of the home. And where is the home, what the human relation, what phase of our infinitely complex civilization, that is not wretchedly afflicted by the Great White Plague? Disraeli, Lecky, Goldwin Smith, Hughes—such men have and do comprehend this. Why, indeed, wait for future generations to act? To-day the end may begin to be fought for

if, abjuring the tutelage of private enterprises, and under the Presidency of our greatest statesman since Lincoln, our people will but determine to possess in themselves the sovereignty for which Washington and our fathers fought.

Another fine thing about Goethe. A man came to him with a tremendously difficult task and feared he could not get away with it. "Ach," answered Goethe, "all you have to do is to blow on your hands!"

Go to it, brother.

TUBERCULOSIS AND GENIUS: WITH PARTICULAR REFERENCE TO FRANCIS THOMPSON.

BY ARTHUR C. JACOBSON, M. D., of Brooklyn, N. Y.

"I recall a poet. . . . In his case the psychological manifestations were undoubtedly associated with disorder of the body."—Personal allusion in Thompson's prose essay "Health and Holiness."

In a paper published by the author about six years ago* the influence of the toxins of tuberculosis upon temperament and genius was exhaustively discussed and many instances cited. While this article was being written Dr. John Bessner Huber published, in 1906, his well-known book "Consumption and Civilization." A chapter of this book is devoted to a discussion of the influence of tuberculosis upon literature and the arts, with special consideration given to Robert Louis Stevenson, Chopin, Keats and Marie Bashkirtseff. It clearly sets forth that "the quality of genius may, in some cases at least, be affected by tuberculosis." Thus Huber and the present writer worked on the same theme and arrived at identical conclusions without knowledge of each other's researches; indeed, a long time elapsed before the two sets of data were critically compared. It would seem that the validity of Huber's conclusions could have been established in

no better way than by the close-following publication of the same findings by an independent worker.

The spurring influence of the *spes phthisica* and related psychological phenomena upon the creative mind has, of course, often been noted by puzzled observers, as in the case of Schiller, of whom his biographer, Nevinson, wrote that "it is possible that the disease served in some way to increase his eager activity, and fan his intellect into keener flame." Certain phrases of Keats would seem to show that he apprehended the same influence, and Lanier gave himself up quite understandingly to the intoxication. So the workings of the psychological switch board under this special stimulus have often been noted and commented upon by mystified laymen and by some of the inspired geniuses themselves, and physicians of understanding in such matters have doubtless observed them too; but Huber's book contains, so far as the present author has knowledge, the first scientific discussion of this very interesting phase of psycho-pathology.

Stevenson is probably the most familiar example of the genius whose powers are quickened by reason of the general psychic excitation resulting from the action of tuberculous by-products. The natural optimism of such a mind is intensified by the

**Medical Library and Historical Journal*, December, 1907, and *Aesculapian*, December, 1908.

characteristic effect of the toxins until, strange paradox, evil is seen to incite good—pathology to warm and color delightful qualities of temperament. We see a very similar instance in Emerson, likewise an intense optimist. Other notable examples of genius or of high talent as influenced by tuberculosis, studies of all of whom appear in the author's earlier paper, have been John Milton, John Locke, Alexander Pope, Percy Bysshe Shelley, Tom Hood, Laurence Sterne, Thomas De Quincey, Elizabeth Barrett Browning, Molière, Henry Thoreau, Goethe, Balzac, Jane Austen, Samuel Butler, Edward Gibbon, Voltaire, Francis Beaumont, Walter Scott, Dr. Johnson, Baruch Spinoza, Georges de Guérin, David Gray, Amiel, Washington Irving, John R. Green, Richard Baxter, Charlotte Brontë and her almost equally distinguished sisters, Emily and Ann, Rousseau, John Ruskin, Charles Kingsley, Robert Southey, Nathaniel Hawthorne, Toru Dutt, Robert Pollok, Hannah More, Pierre Jean de Béranger, William Ellery Channing, Immanuel Kant, "Thomas Ingoldsby" (Richard Harris Barham) and James Ryder Randall. In addition to these may be mentioned Mozart, Descartes, MÉRIMÉE, Richelieu, Raphael, Bastien-Lepage, Jacquemart, Trutat, Watteau, Paganini, von Weber, Nevin, Purcell, Rachel, Laennec, Bichat, Cardinal Manning, Rush, Trudeau, Godman, William Pepper (2nd), Calvin, Cicero, Cecil Rhodes, Saint Francis of Assisi and the great surgeon Dupuytren, of whom Dr. James J. Walsh has written a sympathetic study in which are described his feverish activities.

The writer is in no sort of sympathy with the theory of some people that genius is a disease, and he has been at some pains to combat it as vigorously as lies in him in an article recently published.* Genius makes for disease (e. g., insanity), but disease cannot, of itself, account for genius. The author is far, then, from claiming that tuberculosis can make a genius of a man, or that it can create even the initial spark. He merely predicates it to be a quickener of already germinating or flowering faculties of extraordinary potentiality, which even without its influence would have marked their possessors as men of remarkable talent or genius. It would be as great an error to advance an argument seeking to prove that any genius was a genius because he was tuberculous as to reason that

any genius was a genius because he was "crazy." It is perfectly evident that many representing the very highest types of genius have owed nothing to the *spes phthisica*, that is, were not tuberculous. Indeed, we may say that while the genius is exceptionally prone to disease, he is not, as a rule, attacked by tuberculosis. On account of his peculiar nervous organization he is more likely to be claimed by insanity or some allied disability, which may destroy his productivity or color his creations, as it did those of Tasso, Cowper, Guy de Maupassant, Byron and Poe. As a watch is not built to withstand lawn-mower usage, so the delicate organization of the genius is apt to be injured by the hard conditions of our social system, and it is absurd to reason that insanity is ever his good angel. It is his Nemesis, and he does his work not because of, but in spite of, the Damoclean sword. While often of insane temperament, his greatest creative work reflects the man at his best, that is to say, sanest, and to the degree that clinical insanity enters in, to that degree in his work vitiated. We may conceive of the insane diathesis as implanted in accordance with nature's law of compensation. That is its only significance in relation to genius. One can readily understand how misconception and confusion have grown out of the frequent association of genius and disease. The prevailing error has been a putting of the cart before the horse—a confusion of cause and effect.

The difference, then, between insanity and tuberculosis in their effects upon genius, is that the one is antithetic to the faculties that actuate the creative mind, while the other is synergetic. Neither accounts for the fundamental quality of mind which characterizes genius and which is *sui generis*. Upon the already set psychological switchboard each merely exerts its good or bad effects, as the case may be, like the many other factors which influence human life and thought.

Despite all that has been said by Huber and the author as to the true role of tuberculosis in this sphere, there is hardly any doubt that the popular view will come to approximate that in respect of the relation of insanity to genius. The unsound vulgar view will prevail as regards tuberculosis, because the crowd adopts bizarre and sensational doctrines by preference. For the same reason it holds to a belief in the essential "craziness" of genius. Intellectual

**Medical Record*, November 23rd, 1912.

plebeians and the bourgeoisie of science also foster the latter view because they do not desire to do justice to those who possess the greatest gift of God to man, not always with conscious venom, but because of natural dislike and misunderstanding of creative aristocrats so divinely different from the common mould of men. Under Socialism genius would find its Procrustean bed still more difficult to lie in. Said Charles Leonard Moore in the *Dial* recently: "The great cause which is being tried in the world to-day is that of Genius vs. Democracy. The people everywhere are refusing to admit the existence of superiorities. Hence what M. Faguet calls 'the Cult of Incompetence.' Democracy in art and literature is certainly unthinkable, a contradiction in terms. These things are of and for the few—the many simply do not know what to make of them; only in their weakest or most utilitarian forms do they appeal widely. So powerful in America, however, is the set of the democratic current that nothing can make head against it. Preachers, professors, politicians, Presidents—all, like the Sausage Seller in Aristophanes, bring their sweet little honey-cake to the great Demos. They return in flattery what they get in pay. If an infinitesimal part of the effort and expense, which with us have gone to make the intellectual halt half-whole or the intellectual blind capable of groping, had been given to develop promising talent, we should be to-day all one blaze of glory. But our motto has been, 'Let us rally round our mediocrities, for our geniuses can take care of themselves.'" Well, very often they cannot, for, as we shall see, the genius is apt to be a good deal of a child, so far as meeting the issues of material life is concerned. Then, because the light of fame brings out flaws which would not be apparent in ordinary people, we assail even the successful genius with the vicious, ignorant, unfair, petty and ill-tempered judgment that he is genius because, forsooth, he is insane, by which a very deep disgrace is implied. This is another vulgar view—that insanity is a disgraceful condition. So to all these foolish beliefs will be added another, postulating tuberculosis along with insanity as accounting for genius.

With this general introduction the writer begs now to present a study of a man who, perhaps better than any of the subjects of his first essay, typifies the tuberculous genius of the highest order—Francis

Thompson, English poet and "the greatest achievement of Catholicism in the nineteenth century." Like Keats, he was a student of medicine. He studied medicine for six years at Owens College, Manchester, but failed three times in examinations for the degree. His father, who was a physician practising at Preston and Ashton-under-Lyne, had first tried to make him a priest (both his parents were converts to the Roman Catholic Church), and until he was seventeen, when he took up medicine, he was in training at Ushaw College. After his failures his father appears to have cast him off utterly, whereupon he helplessly attempted to earn a living in the humblest ways, finally going to London, in November, 1885, being then about twenty-six years of age. He worked at first as a publisher's collector, afterward selling matches, newspapers and pencils. He also ran errands, held horses and worked in a bootmaker's shop, sleeping at night on the waste ground near Covent Garden, where the refuse of the great market was thrown. Thus destitute and ill, he became a victim of laudanum, which, as with De Quincey, appears to have enabled him to cope with his neuralgia and tuberculosis. Five years of terrible privation and sickness reduced him to beggary. During these years of outcast life he wrote two poems on ragged scraps of paper, "The Passion of Mary" and "Dream Tryst," and a prose essay, "Paganism Old and New." These he sent to an editor, Mr. Wilfrid Meynell. Believing that they were not accepted he attempted suicide by taking laudanum but was saved by Mr. Meynell, who had traced him to the refuse heap, his interest excited by the remarkable character of the contributions. He was induced to enter a hospital and afterward sent to Storrington, Sussex, to recruit. He then wrote the "Ode to the Setting Sun," other verse, and the "Essay on Shelley." His genius was promptly recognized by Browning and Coventry Patmore. In 1893 he published his first volume of "Poems," written chiefly at Storrington, of which the best known is the "Hound of Heaven," marked by marvelous spiritual insight, metrical beauty and incomparable imagery. In 1895 "Sister Songs" were published, dedicated to the children of Wilfrid and Alice Meynell, his friends and protectors. They describe the days of his outcast experience. From 1893 to 1897 he lived mostly near the Franciscan monastery in Pantasaph, North Wales, cared for by the monks. In 1897 he pub-

lished the "New Poems," written for the most part in Wales. Of these the "Mistress of Vision" and the "Anthem of Earth" rank high. Of his prose work the "Essay on Shelley" abounds in striking thought and verbal beauties. A devout Catholic, of ascetic temper and mystical prepossessions, he may be called the laureate of his Church, though the world claims him as one of its immortals. He entered the Hospital of St. Elizabeth and St. John, in St. John's Wood, in the summer of 1907, and died there on November 13th of the same year. He was buried in the Catholic cemetery at Kensal Green. His tomb is inscribed with his own words: "Look for me in the nurseries of Heaven."

That last phrase furnishes one of the keys to a proper understanding of Francis Thompson's character. This "most august and pontifical of poets," towering over all the "filigree poets and measures of syllables" of his age, retained to the end the child-spirit. It is said that the great artist never outgrows his childhood; his intuition, piercing through things, is the intuition of the child. Much is lost to grown-up vision. Thompson views the world with the grave and solemn wonder of the child. Being a child, with no responsibilities, no doctrines, and "no heavy sense of an apostolic mission," he sings naturally and unconsciously, like the skylark. His poetry takes a religious turn because he hears Nature speak in the language of religion, in which are cast all his own thoughts. He is not, as has been charged, the poet of a little clique of co-religionists, but second in equipment and power to Shakespeare, according to the judgment of Arnold Bennett and many other competent critics not of the Catholic faith. Thompson was not a drunkard or in any way depraved. Naturally, the circumstances of his life gave rise to suspicions, and these derived apparent support because of a remorseful note in some of his verses. His use of laudanum came about in a manner denoting no moral turpitude whatsoever. His very innocence and saintliness accounted for many of his difficulties; only purity and sincerity inspired his pen.

Thompson's life on the streets of London was the life of a perplexed child, thoroughly bewildered by the confusion and conflict of city life and unable to meet its distresses and discomforts in any way commensurate with his tremendous powers. Yet before he died this glorious bootblack and beloved vagabond of song was in great

demand as a critic and essayist by the great English literary journals. The world should never give up its atypical boys, says Bliss Perry, speaking of the late maturity of Rousseau. Mendel himself was never able to pass examinations. The world ought never to give up the Thompsons, for all their incapacities. Out of their very failures have come successful careers, and over physical degradation have they won victories and towered in intellectual glory. This is something that ought to be remembered by those who are so dogmatic in classifying our so-called defectives. They would not recognize a potential Thompson or a Verlaine, much less distinguish the types. But then they are working for the precious purposes of democracy.

So the life of this shy and sensitive soul, or breath, rather than man, was a kind of dream. Wyndham calls him an angel ascending the iridescent ladder of sunlit imagination. No poet since Shakespeare has attained to his wealth of imagination, subtlety of thought, or magic of language. Read the "Hound of Heaven" and that sublime "Ode to the Setting Sun," ye lovers of Shelley and of Keats, and believe! He differs from the phrase-makers and aesthetes in that his message is the truth. Truth is the simplest of things, and we have the word of that other child, G. K. Chesterton, that religious imagery, so far from being subtle, is the only simple thing left for poets. So far from being merely superhuman, says this fascinating infant, it is the only human thing left for human beings. Thompson appeared at a time of gross materialism and unbelief, at a time when the dogmas of science had enthralled men's minds to the exclusion of spiritual beauties and of faith. In this modern world, but not of it, Thompson, says some writer, had been set down by the angels on an earth which had just outgrown its childhood. What a miracle that the glorious music which expresses this man's splendid faith should have arrested such a world's attention! What does the miracle signify? It means that it is possible for the mystic to set at naught the materialist; to bear him down by sheer spiritual power against which the negations of those enslaved by the hierarchs of science and the priests of human pedantry avail nothing—if the mystic be a Thompson capable of revealing even to the crass modern mind "the Divine Presence, which is beauty." Martin D. Armstrong has explained the difference between the mystic and the ma-

terialist in terms the convincing force of which even the materialistic physician must concede.* Reason, he says, is the outcome of experience: it is a science built up of millions of tabulated facts, a theory evolved from certain data. Each new fact is another datum, and every additional datum must alter the theory. Hence reason is an unstable quantity, an instrument of limited power. "Reason, or the ratio of all we have already known, is not the same that it shall be when we shall know more." Reason must be judged by life, not life by reason. Nietzsche said: "The more abstract the truth you wish to teach, the more you must allure the senses to it"—the senses which are the only channels to the soul. Bergson's philosophy mistrusts reason in all the profounder matters of life and regards the emotions—in other words, the promptings of the living soul—as the only reliable guides.

As was the case with Keats, Shelley, Lanier, Schiller and many of the other creative minds discussed by the author in his earlier essay, the time of our "God-smitten" poet's greatest productiveness coincided with the most active period of his disease.

Like De Quincey, Thompson was succored in London by a girl of the streets—one of those women who, to De Quincey, "were simply sisters in calamity, and sisters amongst whom, in as large measure as amongst any other equal number of persons, commanding more of the world's respect, were to be found humanity, disinterested generosity, courage that would not falter in distress of the helpless, and fidelity that would have scorned to take bribes for betraying." The world is indeed indebted to the one of this class who saved to it a

**Forum*, November, 1913.

man who was to create works before which the voice of criticism is dumb. Thompson describes the incident in the following lines:—

"Forlorn, and faint, and stark,
I had endured through watches of the dark
The abashless inquisition of each star,
Yea, was the outcast mark
Of all those heavenly passers' scrutiny;
Stood bound and helplessly
For Time to shoot his barbèd minutes at
me;
Suffered the trampling hoof of every hour
In night's slow-wheeled car;
Until the tardy dawn dragged me at length
From under those dread wheels; and, bled
of strength,
I waited the inevitable last.
Then there came past
A child; like thee, a spring-flower; but a
flower
Fallen from the budded coronal of Spring,
And through the city-streets blown with-
ering.
She passed,—O brave, sad, loveliest, ten-
der thing!
And of her own sad pittance did she give,
That I might eat and live:
Then fled, a swift and trackless fugitive."

This was a momentous gift of one child to another; one which saved, for a time sufficient for the recipient to do his work, the life which later

"Faded from a garden to a grave,
Passing without a tear into the stars."

115 Johnson Street.

Reprinted from the International Medical Journal.

And his method is so simple. Or rather his methods, for he has two. One is to do things nobody else does, which makes news that must be printed, and the other is to do familiar things in unfamiliar ways, and that also makes news of the same sort. Simple methods, however, are fortunately hard to imitate, else might newspaper revenues suffer.—*New York Times*.

The foregoing appearing in a medical journal, would not impress us particularly, as a professional journal is expected both to appreciate the value of Crile's work and to favor animal experimentation. Coming from a high class popular periodical, it will have an influence over lay judgment that no medical journal could exert.—*Buffalo Medical Journal*.

PNEUMONIA AND INFLUENZA.

BY WILLIAM WEINBERGER, M. D., ADJUNCT ATTENDING PHYSICIAN TO THE
LEBANON HOSPITAL.

IN addition to the world with which we are familiar there is another world, vast, intensely interesting and exceedingly important, which surrounds us on all sides, and which although invisible to the ordinary eye is of vast importance to the life of the plants and animals, we know so well, and to our own life.

We refer to the world of minute plants and animals.

While the activity of these tiny creatures is ever manifest, they themselves are not seen, unless vast numbers are crowded together, as for example the dots and streaks on a crust of bread. To study the separate individuals we must use a microscope, which will magnify them. In fact were a man magnified as much as are these tiny organisms, he would be over a mile tall. So tiny are they that the best milk on the market contains at least 600,000 to every teaspoonful; good milk over four millions; and the ordinary milk sold in cities many times this number.

We cannot escape from this world of the micro-organisms, for our own life is possible only because these do play their part.

In the great chain of existence the carnivorous animals use as their food the herbivora plants. The plants feed on the simplest gases—carbon dioxide and ammonia—on the salts and water.

But the origin of these gases and salts is the decomposed tissue of dead plants and animals. Suppose that the putrefying bacteria should suddenly cease their activity.

Then each plant and animal, when it dies would be embalmed by the sun; there would be no food for plants, and they would die.

Next the plant eating animals and the carnivorous animals would all die, because this one link of the microorganisms had dropped from the chain.

To go further. We are the hosts of myriads of these tiny creatures; they live on our skin and in our intestines and it is doubtful if we could well get along without them.

In the vast host of micro-organisms there are many species, races and varieties, which an expert can distinguish as correctly as can you in a flower garden pick out the roses from the lilacs, lilies, pansies. Not only that but of each of these species one can distinguish varieties, just as the florist distinguishes the tea roses from moss roses and among the tea roses distinguishes the Jacks, Richmond Reds, etc.

Among all these there are a few varieties which are decidedly poisonous to us and which man should try to exterminate just as he tries to kill off among the reptiles the rattlesnakes.

They are the so-called "virulent" microbes, which live at the expense of a host and injure him.

Pathogenic or disease-causing micro-organisms are popularly called "germs."

Some diseases are always caused by one and the same germ; as pneumonia, influenza, typhoid fever, cholera, lock jaw, tuberculosis, diphtheria, cerebrospinal meningitis and so forth.

To-night's lecture shall deal exclusively with the two first mentioned diseases: Influenza and pneumonia caused by the specific germ of influenza or grip and the specific germ of pneumonia.

The simple presence of these germs does not cause disease. It is the poisons, called "toxins," which they produce that cause the trouble. When these germs gain access to our blood they are carried about and multiply therein.

Each germ has a favorite organ in which it is especially apt to settle and cause disease. Just as the typhoid germs select especially the intestines, the tubercle bacillus

* A lecture delivered, February 25th, 1914, under the auspices of the Social Service Department of Lebanon Hospital, New York.

the lungs, so does the pneumonia bacillus, although carried by the blood over the whole body and having the choice of practically every organ, usually chooses the lungs.

The pneumonia bacillus is almost ubiquitous, it is an almost constant inhabitant of our mouths and seems always waiting for the time when the soil of our bodies shall be favorable. This is not the case when our bodies are in their normal and vigorous state in which we ought to bend all our efforts to keep them by healthful living and exercise, careful observation of sanitary rules, as will be pointed out later. Allow your constitution to run down by worry, lack of proper food, of fresh air, as confinement in stuffy tenements with their improper ventilation will do, or by undue exposure to excessive temperature changes, both low and high, and the hitherto harmless parasite gains access to our system, and we may contract pneumonia.

Now let us very shortly consider the changes that occur in the lungs in this disease: Our lungs resemble a tree. There we see the trunk, the larger and smaller branches gradually merging into very small twigs at the end of which the leaves are dangling. So we have the large air pipe, leading into the large and smaller bronchi, that gradually merge into the air cells, which compose the lung proper.

Pneumonia is an inflammation of the air cells. The bronchi are not affected in this disease, whereas the grip establishes itself mostly in the bronchi, causing a more or less severe bronchitis.

I will pass over any anatomic changes caused by the pneumonia bacillus. Suffice it to state that in the course of the disease the air cells of the affected lung are being filled with an exudative mass that replaces the air therein, thus making the lung resemble a piece of liver. The onset of an attack of pneumonia is nearly always sudden. The man who was feeling perfectly well is suddenly attacked by a terrible pain in the side, which prevents his taking a long breath, and by a severe chill followed by fever. The patient feels very ill from the first and goes to bed at once. His temperature rises rapidly and in a few days is from 104 to 106. He soon begins to expectorate a sputum containing more or less blood. He lies in bed breathing rapidly, his cheeks flushed, his eyes bright. His pulse is rapid, he coughs frequently—a short cough which hurts him badly. The patient continues in this condition from 3 to 10

days. Then comes the crisis and convalescence begins. This crisis in pneumonia is a wonderful phenomenon. Up to the time of it the patient seems to be getting worse, seems to be even at death's door; then within a few hours the temperature falls to normal, the pulse and respiration become slow, the cough ceases and the patient again feels comfortable and is practically out of danger. However, the lungs are by no means normal. Now it depends on nature to remove the exudate in the lung. All these symptoms were due to the poison which the germs were forming in the lungs. The crisis doubtless means that at last the body provided enough antitoxine to get the upper hand. If the body cannot form enough then the patient dies because of the general poisoning.

In acute lobar pneumonia we save life by guarding the patient against heart failure, and tiding him over the poisoning caused by this disease. Leave the patients alone, give them plenty of fresh air and over 70 per cent. will get well.

Of pneumonia patients it has been said that all the young get well, and all the old die; but there are many exceptions to this rule.

Pneumonia is more prevalent in the early spring. It attacks especially the inhabitants of the city, persons of sedentary habits, those suddenly exposed to cold weather (especially half invalids) and above all others, alcoholics.

In the U. S. during the census year 1890, over 9 per cent. of all deaths were due to pneumonia, in 1900, over 10.5 per cent.

Jurgensen states that pneumonia is a house disease. "In the village of Lustnau there were 223 dwellings in which during a period of 8 years the disease occurred once in 40 houses, several times in 44, and not at all in 139."

Infection derived from handling of the bed clothes is exemplified by the following case: A man was attacked by pneumonia and soon afterwards several of his servants who had been cleaning his clothes became ill. One maid who had been thus exposed returned to her home, situated some distance away, carrying with her some linen which had been used in the sick room. Eight days afterwards both she and her sister who occupied the same bed developed pneumonia.

The death rate is considerably higher in the negro than in the white man; and higher for indoor than outdoor occupations.

Pneumonia is more prevalent in cities than in the country, indicating that poor hygiene and overcrowding, with the attendant danger of infection, are more important factors than climate and temperature. Emigrants are more susceptible than natives who have become acclimated.

Pneumonia is well known as one of the most fatal complications of influenza.

And this brings us to the consideration of influenza.

A number of you that are old enough will remember the terrific epidemic of influenza that in the years 1898-1899 swept like a giant wave over the old and new world, attacking even 41 per cent. of all exposed.

Toward the end of October, 1889, there occurred an epidemic outbreak of influenza in St. Petersburg. By November the disease had swept through Germany and France. By December through Austria, Sweden, Denmark, Switzerland, Italy, Spain, Portugal, Belgium and the Netherlands, England, the Balkan States and North America. By March, 1890, it had reached India and Australia, by April and May China and the Gold Coast of Africa.

Berlin was invaded the middle of November. Paris from the 17th to the 20th of November; London the second week of December; Boston and New York the 17th of December. Within a year it had visited nearly all parts of the world.

This is the disease we have to deal with. Truly it gripped everyone within reach and with a suddenness that was marvelous. Hence the name "La Grippe."

Yet we often see single cases, the specific germ causing it being present in over 30 per cent. of the cases of chronic bronchitis. The germ is everywhere, but conditions for its rapid dissemination seem only occasional.

This bacillus is most apt to attack the respiratory tract. In doing this it causes acute rhinitis and acute bronchitis with—and this is most important in the diagnosis—far more prostration and debility than are seen in other forms of bronchitis.

The bacillus may attack many other organs besides those of respiration.

In a second group nervous features predominate—headaches, profound depression, prostration and so forth. In another group the gastro-intestinal tract is especially affected, and the patient suffers from nausea, vomiting, abdominal pains, jaundice and so on. Numerous are the complications of this

disease. There is not an organ that may not become involved. Let me mention especially that appendicitis may be traceable to influenza.

That influenza seldom kills is indicated by the fact that only one person of 200 affected dies. But as a disease which destroys health, few can equal it. The convalescence is long and tedious; it may take months, and for years the patient may not feel perfectly well.

And now let us proceed to another chapter, which is the real object of to-night's lecture, the remembrance of which, I hope, will be of real value in case of necessity. It is the prevention and treatment of pneumonia. For an intelligent discussion of this let us present to you again the salient features of the disease. We learned that pneumonia is an infectious disease, that it is communicated both from person to person and through infected articles, such as dust which is laden with germs, infected bed clothes and so on. That it is a house disease, that it has special predilection to half invalids, those that are weakened by previous diseases and were exposed to cold weather—remember the frequent occurrence in the spring—and above all others to alcoholics, that it invades the lung, rendering the portion affected unfit for respiration, that it weakens the heart and the nervous system by means of a poison, the toxin of pneumonia.

With these facts at hand how will we then prevent pneumonia? We cannot eradicate the pneumonia bacillus, it is everywhere around and even within us. But we may make it especially hard for this germ to get hold of and establish itself in our organism. How will we do this? The answer will be: By strengthening the natural protective agencies of the body.

A proper way of living, healthful exercise in the open air, regardless of weather conditions, in order to get used to temperature changes; clean, dust-free surroundings, sufficient ventilation of our living rooms, removal of all that can catch germ-laden dust, such as portieres that in some houses almost attain the dignity of fixtures, proper, wholesome food, temperance in the selection of beverages, keeping of regular hours, sufficient sleep and last, but not least, complete recovery from any sickness, so as to escape invalidism.

Similar is the treatment and prevention of the "Grippe." Only the epidemic factor has to be considered to some greater extent,

as we know that the germs of this disease are largely disseminated by droplets or bubbles of mucus and saliva, which the patient ejects while talking and coughing; accordingly these germs are not found anywhere in the fresh open air of the country or in the air of reasonably clean and decent areas of the city.

Lots of them, however, are to be found in the stuffy, unventilated air of rooms, halls, churches and theatres, or even railroad cars, that were not cleaned satisfactorily from the accumulated dust and emanations from human skins, breath and teeth.

Now in concluding: Remember that the best treatment of pneumonia is its prevention (like of any other disease).

Prevent the onset of the sickness and you are cured of it.

Healthful, hygienic life, such as proper, seasonable food, avoidance of intemperance in any respect, sufficient sleep, plenty of exercise, not in closed, ill-ventilated gymnasiums, but in the open air, regardless of weather conditions, recovery from recent illness to prevent invalidism are the proper means thereto.

When the public has been taught to be as "finicky" about the cleanliness of the air it breathes as it is about that of its food, ninety per cent. of all cases of "grippe," pneumonia and common colds can either be prevented or if contracted, readily be cured.

DIET FOR THOSE PAST FORTY.

DR. CHARLES F. BOLDUAN, director of the bureau of public health education of the Department of Health of New York City considers that whilst overindulgence in proteids (meat, eggs, fish) is common to all ages, especially in America, those of us who are over forty are especially prone; and this fact tends to increase markedly the death rate for the years after two score. Overindulgence in meat especially is largely responsible for the fact that people in that life era are dying off faster than was the case thirty years ago.

The popular belief that it is wise to consume less meat in summer might well extend to all seasons. Proteids specialize in building up and rebuilding the body; fats, starches and sugars are more useful in the production of work and heat. Normally one needs, to repair and replace worn out tissues, three ounces of dry proteid. On the other hand elimination must be maintained; and this is done largely by the kidneys. That is why overeating and overdrinking are apt to break down those most important organs.

What then would be a correct diet? In terms of calories (heat units) the human body has been found to need 3,000 calories, derived from all kinds of food, a day. Thus a day's meals should be about as follows:

Breakfast—Oat meal to the amount of a good sized helping; a glass of milk and a little more with the oatmeal; sugar for the oatmeal and two slices of bread and butter. Here we have 1,000 calories already, which is all that can be allowed for breakfast. If coffee is substituted for milk it is necessary to subtract 300 calories and then make it up by eating another slice of bread, although coffee has no place in this diet.

Luncheon—Toast, milk and fruit to the quantity of 500 calories.

Dinner—Meat, three vegetables with gravy, but only one helping; two slices of bread and butter, one helping of prunes and tea with milk and sugar. This gives 1,500 calories, which makes the 3,000 total for the day.

With this a satisfying amount of water should be drunk at meals; and copiously between meals.

New Proprietor of Public House (that levies a fine for every swear word)—
"Ere, Bill, that's a penny you owe to the

parson's swear box." Bill—"I'd better do what I done afore—put a 'arf crown in and 'ave a season ticket."—*Punch*.

CLASSIFICATION OF TUBERCULOSIS CASES.

THE National Association for the Study and Prevention of Tuberculosis has adopted a new classification of cases of this disease, with the results of disease. This classification is paralleled with that heretofore obtained:

Classification of Patients on Examination.
Old.

1. Incipient (Favorable)—Slight initial lesion in the form of infiltration limited to the apex of a small part of one lobe.

No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbances or rapid loss of weight).

Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest.

Expectoration usually small in amount or absent.

Tubercle bacilli may be present or absent.

2. Moderately Advanced.—No marked impairment of function either local or constitutional.

Localized consolidation moderate in extent with little or no evidences of destruction of tissue, or disseminated fibroid deposits; no serious complications.

3. Far Advanced—Marked impairment of function, local and constitutional.

Localized consolidation intense, or disseminated areas of softening, or serious complications.

New.

1. Incipient—Slight or no constitutional symptoms (including particularly gastric or intestinal disturbances or rapid loss of weight).

Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours.

Expectoration usually small in amount or absent.

Tubercle bacilli may be present or absent.

Slight infiltration limited to the apex of one or both lungs, or a small part of one lobe.

No tuberculous complications.

2. Moderately Advanced.—No marked impairment of functions either local or constitutional.

Marked infiltration more extensive than under incipient, with little or no evidence of cavity formation.

No serious tuberculous complications.

3. Far Advanced—Marked impairment of function, local and constitutional.

Extensive localized infiltration or consolidation in one or more lobes, or disseminated areas of cavity formation, or serious tuberculous complications.

Classification of Subsequent Observations.
Old.

Cured—All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

Apparently Cured—All constitutional symptoms and expectoration with bacilli absent for a period of three months, the physical signs to be those of a healed lesion.

Arrested—Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least two months.

Improved—Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration with bacilli usually present.

Progressive (Unimproved)—All essential symptoms and signs unabated or increased.

New.

Apparently Cured—All constitutional symptoms and expectorations with bacilli absent for a period of two years under ordinary conditions of life.

Arrested—All constitutional symptoms and expectoration with bacilli absent for a period of six months; the physical signs to be those of a healed lesion.

Apparently Arrested—All constitutional symptoms and expectoration with bacilli absent for a period of three months, the physical signs to be those of a healed lesion.

Quiescent—Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive, the foregoing conditions to have existed for at least two months.

Improved—Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration with bacilli usually present.

Unimproved—All essential symptoms and signs unabated or increased.

THE NEW YORK STATE HEALTH LAW.

FOLLOWING are important provisions of the New York State Health Law, such as might be found of interest in other of our American commonwealths:

There shall be a public health council, consisting of the State Commissioner of Health (whose salary is to be \$8,000 the year) and six members appointed by the Governor, of whom at least three shall be physicians and one a sanitary expert. This council is to enact and from time to time amend a sanitary code (applicable everywhere within the State except the metropolis), but each city and town may enact additional regulations not inconsistent with the State code; the council has no executive, administrative or appointive power or duties. Heretofore there have been six divisions of the State Department of Health—administration, sanitary, engineering, laboratory and research, communicable disease, vital statistics, publicity and education. These divisions are now written into the statute, and to them are added three new ones (each to be in charge of a director)—child hygiene, public health nursing, tuberculosis. The Commissioner of Health is specifically charged with the enforcement of the public health laws and the sanitary code, and shall exercise general supervision over local health authorities (many among whom have in the past been grievously negligent of their duties); he must divide the State from time to time into twenty or more sanitary districts, appointing for each a supervisor who must be a physician. The duties of these sanitary supervisors shall be: An annual sanitary survey of their districts; organization of district conferences of health officers; adjustment of questions of jurisdiction arising between local health officers; the study of causes of excessive mortality from any disease; the promotion of the registration of births and deaths; inspection of labor economic folly and loss. It is uneconomic,

if nothing else, to have exhaustion increase progressively day by day and week by week, camps and enforcement of the sanitary code; inspection of Indian reservations; securing the co-operation of physicians in the improvement of public health; the promotion of educational campaigns on public health.

The Commissioner of Health may employ public health nurses, assigning them from time to time to assist sanitary supervisors and local health officers in the control of infection. He must recommend to city authorities the establishment of hospitals for infectious diseases and shall inspect all such institutions. The powers and duties of town and village health boards are by this act transferred to the respective boards of trustees; should any of the latter fail to appoint a health officer the Commissioner of Health may exercise the powers of such an officer in that locality, the Commissioner's expenses being a charge upon the locality. The Commissioner is empowered to investigate the enforcement of the Tenement House Laws in all cities. Every health officer shall receive a respectable compensation for his services (not as formerly when, in one instance, the village dog catcher got a larger salary than the health officer). In communities of 8,000 or less at least ten cents per annum per inhabitant shall be paid; health officials in populations of 8,000 or over shall have an annual salary of not less than \$800; and they shall have additional compensation (which shall be "equal to the charges for consultation services in the locality") in times of epidemic. Health officers may employ any number of public health nurses they may deem necessary "within the limits of the appropriation made therefor by the city, town or village."

The Tuberculosis Registration Law of the State is amended to permit the reporting of cases of tuberculosis by phy-

sicians by telephone, or in person as well as in writing. Health officers are authorized to cause every reported case of this disease within their jurisdiction to be visited by a public health nurse, unless the physician making the report will carry into effect the procedures and precautions required by the Public Health Law and the Sanitary Code, when the nurse shall act under his direction and supervision. Each registrar of vital statistics must report promptly to the health officer the name and address of every tuberculosis patient that has died, and the health officer must ascertain if such patient had previously been reported by

the doctor signing the death certificate. If any doctor has been found repeatedly to have failed to report cases of this disease the health officer shall report his violations to the local health board, who shall enforce the penalty for the violation (a misdemeanor) of the tuberculosis law. Health authorities are given control over persistently dangerous and careless patients afflicted with an infectious, contagious or communicable disease; on complaint to a magistrate, with proof that such patient is a menace to the community, he may be committed to a hospital for the protection of his family and of the public.

BORAX AN EFFECTIVE LARVACIDE.

NINETY-FIVE per cent. of flies are bred in horse manure. A large part of the fertilizer used in vegetable gardens, which latter are mostly near dwellings, is such manure. It follows then that flies thus bred become not only dreadful nuisances but become also dangers, in the ways now so well known, as carriers of the germs of typhoid fever, tuberculosis, the dysenteries and other serious diseases. Most important, therefore, is a contribution from the Bureau of Entomology of the Department of Agriculture in Washington, whose specialists have discovered that a small amount of ordinary borax sprinkled daily on manure will effectively prevent the breeding of the typhoid or house fly. Similarly, the same substance applied to garbage, refuse, open toilets, damp floors and crevices in stables, cellars or markets, will prevent fly eggs from hatching. Borax will not kill the adult fly nor prevent it from laying eggs, but its thorough use will prevent any further breeding.

The investigation, which included experiments with many substances, was undertaken to discover some means of preventing the breeding of flies in horse manure without lessening the value of this manure as a fertilizer for use by the farmer. It was felt

that if some means of preventing the breeding of flies near a human habitation could be devised, the diseases spread by these filthy germ carriers could be greatly reduced. While the "Swat the fly campaign," traps and other devices for reducing the number of typhoid-carrying flies are of value, they are of less importance than the prevention of the breeding. It was realized, however, that no measure for preventing the breeding of flies would come into common use unless it was such that the farmer could use it on his manure pile without destroying its usefulness for growing plants, and without introducing into the soil any substance that would interfere with his crops.

As a result of experiments carried on at the Arlington Farm, in Virginia, and New Orleans, La., the investigators found that 0.62 of a pound of borax, or 0.75 of a pound of calcined colemanite (crude calcium borate) would kill the maggots and prevent practically all of the flies ordinarily breeding in 8 bushels of horse manure from developing. This was proved by placing manure in cages and comparing the results from piles treated with borax and from untreated piles. The borax, it was found, killed the fly eggs and maggots in the manure and prevented their growth into flies.

In the case of garbage cans or refuse piles, 2 ounces of borax or calcined colemanite, costing from 5 cents a pound upward according to the quantity which is purchased, will effectually prevent flies from breeding.

While it can be safely stated that no injurious action has followed the application of manure treated with borax at the rate of .62 pound for 8 bushels or even larger amounts in the case of some plants, nevertheless borax-treated manure has not been studied in connection with the growth of all crops, nor has its cumulative effect been determined. It is therefore recommended that not more than 15 tons of the borax-treated manure should be applied per acre to the field. As truck growers use considerably more than this amount, it is suggested that all cars containing borax-treated manure be so marked; and that public health officials stipulate in their directions for this treatment that *not over .62 (62/100) of a pound for 8 bushels of manure be used*, as it has been shown that larger amounts of borax will injure most plants. It is also recommended that all public health officials and others in recommending borax treatment for killing fly eggs and maggots in manure warn the public against the injurious effects of large amounts of borax on the growth of plants. Purchasers of manure produced in cities during fly-breeding season should insist that the dealers from whom they purchase give them a certified statement as to whether or not the manure in the particular car or lot involved in the purchase has been treated with borax.

In feeding to hogs garbage that contains borax care is also recommended, especially when the animals are being fattened for market. Borax is not a very poisonous substance and the feeding of garbage that contains it to hogs, is not likely to be a serious matter. On the other hand borax in large quantities does produce gastric disturbances and for this reason a certain amount of care is advisable.

The method for using this substance in the case of stables is to sprinkle the borax

or colemanite in the quantities given above, by means of a flour sifter or other fine sieve, around the outer edges of the pile of horse manure. The manure should then be sprinkled immediately with two or three gallons of water to eight bushels of manure. It is essential, however, to sprinkle a little of the borax on the manure as it is added daily to the pile, instead of waiting until a full pile is obtained, because this will prevent the eggs which the flies lay on fresh manure from hatching. As the fly maggots congregate at the outer edge of the manure pile, most of the borax should be sprinkled there.

Borax costs 5 to 6 cents per pound in 100-pound lots in Washington, and it is estimated that at this rate it would cost only one cent per horse per day to prevent all breeding of flies in city stables. If calcined colemanite is purchased in large shipments, this cost should be considerably less. At the same time, if the borax is used on the manure only in the proportions stated, its value for use in the garden or for sale to farmers will not be lessened.

In view of this discovery, there now seems little excuse for any horse owner or resident of a city allowing typhoid flies to breed in his stable or garbage can.

It is believed that this information will greatly help the health authorities in their campaign against the typhoid fly. The health authorities have long tried to prevent the breeding of flies in city stables through the use of iron sulphate as a larvacide. In the case of iron sulphate, however, a large amount is required, and other insecticides, such as paris green or potassium cyanide, while effective in killing the flies, are very expensive or extremely poisonous. Borax, which is used freely in most households, and is readily available in all parts of the country, has the advantage of being comparatively non-poisonous and non-inflammable, readily soluble in water and easy to handle. It can be purchased at retail for 10 cents a pound, and a single pound used as directed in a garbage pail or open toilet may prevent the breeding of hundreds of dangerous flies.

The details of the experiments with borax and other larvacides will be found in U. S. Department of Agriculture Bulletin No. 118.

THE LEISURE HOUR.

HISTORY, PHILOSOPHY, FICTION, HUMOR, SATIRE, POETRY.

LEISURE HOUR WAS FOUNDED IN THE BELIEF THAT THE PHYSICIAN IS BUT HUMAN; THAT HE LOVES THE BEAUTIFUL IN THOUGHT AND SENTIMENT AS EXPRESSED IN LITERATURE, AND THAT HE IS AT TIMES SURFEITED WITH TECHNICAL MATTER. SHORT, CRISP CONTRIBUTIONS ON ANY OF THE SUBJECTS NAMED IN THE SUB-HEADING ARE INVITED TO THIS DEPARTMENT.

MUSIC HATH CHARMS.

I THINK sometimes, could I only have music on my own terms, could I live in a great city and know where I could go whenever I wished and get the ablution and inundation of musical waves, that were a bath and a medicine.—*Emerson.*

Musick, when rightly ordered, cannot be preferred too much. For it recreates and exalts the mind at the same time. It composes the Passions, affords a strong Pleasure and excites nobleness of Thought. What can be more strange than that the rubbing of a little hair and cat-gut together should make such a mighty alteration in a man that sits at a distance.—*Jeremy Collier.*

Music the fiercest grief can charm.—*Pope.*

The man that hath no music in himself, nor is not moved by concord of sweet sounds, is fit for treason, stratagems and spoils. The motions of his spirit are dull as night, and his affections dark as Erebus. Let no such man be trusted.—*Shakespeare.*

Music will help thee at thy need, in sickness, grief and all adversities. I know a song which the sons of men ought to sing if they would become skillful physicians.—*Icelandic Poem.*

The Greeks associated Music with Medicine as attributes of Apollo.—*Dr. R. M. Lawrence.*

While there may not be much music in medicine, there is a great deal of medicine in music.—*Lawrence.*

Digestion is facilitated by music; this fact accounts for the popularity of the opera.—*Voltaire.*

My idea of heaven is eating *foie gras* to the sound of trumpets.—*Sidney Smith.*

If thou be made the master of a feast hinder not musick. A concert of musick in a banquet of mine is as a signet of carbuncle set in gold. As a signet of an emerald set in a work of gold, so is the melody of musick with pleasant wine.—*Apocrypha.*

Every physician should be at least an appreciator of music.

Music is Physic for the Soul.—*Ancient Egyptian Maxim.*

The soul is purified by music and prepared thereby for converse with the spirits of light around the throne of Orumzel, the principle of truth and goodness.—*Persian Saying.*

Music influences the mind by means of the corporeal organs. It excites fierceness, indignation and cruelty, and is likewise able to inspire the soul with a sense of pity, lenity, tenderness and love.—*Montesquien.*

By music the minds of the Ancients became formed to the admiration and esteem of proportion, order and beauty, and the cause of virtue was greatly promoted; music, moreover, extends the fancy beyond its ordinary compass and fills it with the gayest images.—*Anonymous.*

We can no more explain why musical tones in a certain order and rhythm, afford pleasure to man and the lower animals, than we can account for the pleasantness of certain tastes and odors. We know that sounds, more or less melodious, are produced, during the season of courtship, by many insects, spiders, fishes, amphibians and birds.—*Darwin.*

It has been proved, by physiological effects on men and the lower animals, that musical sounds produce a marked effect on the circulation. The pulse rate is usually quickened and the force of the heart-beats increased in varying degrees, dependent upon the pitch, intensity and *timbre* of the sounds, and the idiosyncrasy of the individual.—*Chamber's Journal*.

The Marseillaise was like wine to the French revolutionists and lifted many a head and straightened many a weary back on some of those terrible forced marches of Napoleon's.—*Lawrence*.

Musical sounds, received by the auditory nerve, produce reflex action upon the sym-

pathetic system, stimulating or depressing the vaso-motor nerves and thus influencing the bodily nutrition; and certain mental conditions are benefited by suitable musical harmonies. Muscle fatigue is overcome by stimulating melodies, as is strikingly exemplified in the effect of inspiring martial strains upon wearied troops on the march. And the complex process of digestion is facilitated by cheerful music, of the kind termed "liver music" by the French, which is provided by them at banquets.—*Dr. Herbert Lilly*.

Music acts upon the *morale* by fixing the attention upon sweet impressions, and by calling up agreeable recollections.—*Esquino!*

THE VALUE OF PHILOSOPHY.

WHAT is the value of philosophy, and why ought it to be studied, are questions asked and answered by Bertrand Russell, M.A., F. R. S., Lecturer and Late Fellow of Trinity College, Cambridge, in his most absorbing little book *The Problems of Philosophy* (Henry Holt & Co., N. Y. and London).

Many men, under the influence of science or of practical affairs, are inclined to doubt whether philosophy is anything better than innocent but useless trifling, hair-splitting destructions and controversies on matters concerning which knowledge is impossible.

This view of philosophy appears to result, partly, from a wrong conception of the ends of life, partly from a wrong conception of the kind of goods which philosophy strives to achieve. Physical science, through the medium of inventions, is useful to innumerable people who are wholly ignorant of it; thus the study of physical science is to be recommended, not only, or primarily, because of the effect on the student, but rather because of the effect on mankind in general. This utility does not belong to philosophy. If the study of philosophy has any value at all for others than students of philosophy, it must be only indirectly, through its effects upon the lives of those who study it. It is in these effects, therefore, if anywhere, that the value of philosophy must be primarily sought.

But further, if we are not to fail in our endeavor to determine the value of philosophy we must first free our minds from the prejudices of "practical" men. The "practical" man, as this word is often used, is one who recognizes only material needs, who realizes that men must have food for the body, but is oblivious of the necessity of providing food for the mind. If all men were well off, if poverty and disease had been reduced to their lowest possible point, there would still remain much to be done to produce a valuable society; and even in the existing world the goods of the mind are at least as important as the goods of the body. It is exclusively among the goods of the mind that the value of philosophy is to be found; and only those who are not indifferent to these goods can be persuaded that the study of philosophy is not a waste of time.

Philosophy, like all other studies, aims primarily at knowledge. The knowledge it aims at is the kind of knowledge which gives unity and system to the body of the sciences, and the kind which results from a critical examination of the grounds of our convictions, prejudices and beliefs. But it cannot be maintained that philosophy has had any very great measure of success in its attempts to provide definite answers to all questions. If you ask a mathematician, a mineralogist, a historian or any other man of learning, what definite body of

truths has been ascertained by his science, his answer will last as long as you are willing to listen. But if you put the same question to a philosopher he will, if he is candid, have to confess that his study has not achieved positive results such as have been achieved by other sciences. It is true that this is partly accounted for by the fact that, as soon as definite knowledge concerning any subject becomes possible, this subject ceases to be called philosophy, and becomes a separate science. The whole study of the heavens, which now belongs to astronomy, was once included in philosophy; Newton's great work was called "the mathematical principles of natural philosophy." Similarly, the study of the human mind, which was, until very lately, a part of philosophy, has now become separated from philosophy, and has become the science of psychology.

Thus, to a great extent, the uncertainty of philosophy is more apparent than real: those questions which are already capable of definite answers are placed in the sciences; whilst those only to which, at present, no definite answer can be given, remain to form the residue which is called philosophy.

Apart from its utility in showing unsuspected possibilities, philosophy has a value—perhaps its chief value—through the

greatness of the objects which it contemplates, and the freedom from narrow and personal aims resulting from this contemplation. The life of the instinctive man is shut up within the circle of his private interests; family and friends may be included, but the outer world is not regarded except as it may help or hinder what comes within the circle of instinctive wishes. In such a life there is something feverish and confined, in comparison with which the philosophic life is calm and free. The private world of instinctive interests is a small one, set in the midst of a great and powerful world which must, sooner or later, lay our private world in ruins. Unless we can so enlarge our interests as to include the whole outer world, we remain like a garrison in a beleaguered fortress, knowing that the enemy prevents escape and that ultimate surrender is inevitable. In such a life there is no peace, but a constant strife between the insistence of desire and the powerlessness of will. In one way or another, if our life is to be great and free, we must escape this prison and this strife.

One way of escape is by philosophic contemplation. Philosophic contemplation does not, in its widest survey, divide the universe into two hostile camps—friends and foes, helpful and hostile, good and bad—it views the whole impartially.

HIS SATANIC MAJESTY.

I AM quite sure that (bar one) I have no race prejudices, and I think I have no color prejudices nor caste prejudices nor creed prejudices. Indeed, I know it. I can stand any society. All that I care to know is that a man is a human being—that is enough for me; he can't be any worse. I have no special regard for Satan; but I can at least claim that I have no prejudice against him. It may even be that I lean a little his way, on account of his not having a fair show. All religions issue bibles against him, and say the most injurious things about him; but we never hear *his* side. We have none but the evidence for the prosecution, and yet we have rendered the verdict. To my mind this is irregular. Of course Satan had some kind of a case; it

goes without saying. It may be a poor one, but that is nothing; that can be said about any of us. As soon as I can get at the facts I will undertake his rehabilitation myself, if I can find an impolitic publisher. It is a thing which we ought to be able to do for any one who is under a cloud. We may not pay him reverence, for that would be indiscreet; but we can at least respect his talents. A person who has for untold centuries maintained his imposing position of spiritual head of four-fifths of the human race, and political head of the whole of it, must be granted the possession of executive abilities of the highest order. I would like to see him. I would rather see him and shake his tail than any member of the European concert.—*Mark Twain.*

BOOKS.

THE OCCUPATIONAL DISEASES.

WITH the ever-increasing complexity of our civilization the trades by which increasingly exacting humankind is served have become correspondingly and most amazingly complex. For an instance taken quite at random: Time was when the several kinds of hats were all made by one man—a hatter. To-day there co-operate in the making of only the felt hat, blockers, blowers, pouncers, flayers, curlers, steamers, stiffeners, singers, trimmers, coners, dyers, dryers, feeders, hardeners, mixers, welterers and finishers. To specify, observes Professor Thompson in his admirable work here reviewed, all the subdivisions of labor in a complex industry is to accumulate a catalogue of many thousands of technical terms and easily to become lost in a maze of phraseology.

Organized charity has this defect of its excellence that, though we have the poor as ever with us, it arranges to get removed from our sight, and so from our minds and our sympathies as we go abroad to take the air, the maimed, the halt, the blind, the submerged strata. In like manner we have become either injured to or oblivious of much hardship, disease and untimely death suffered most cruelly, in our service. The perusal of such a work as Dr. Thompson's should revive many a wholesome emotion. Many a "human derelict" (we have heard even philanthropists call them that) has come to his most pitiable pass through having helped to make it possible for the rest of us to live magnificently. Such men build our bridges and our skyscrapers; such are "ground hogs" getting "the bends" whilst constructing tunnels beneath our rivers; we are warm by reason that their like are digging for us a mile away from the sunshine; stokers but a few feet from

the keels of our mighty liners are generally pictured as stripped to the waist, whereas, we understand, they have to wear some kind of garment in order that the heat shall not blister their skins; there are many thousands of workers in toxic atmospheres such as blight the vegetation in the factory's vicinity, there is the sandblaster and he who dies almost in his youth of "grinder's rot"; the diamond miner who dies of his pneumonia; the prematurely senile worker in lead, with his impotent wrists and feet, who has, for example, been making the exquisite enameling that beautifies milady's boudoir; the varnisher blinded irreparably by wood alcohol; he with the "phossy jaw," and much else that is dreadful.

For an instance of how much we need education in these premises: Finland prohibited the manufacture and importation of white phosphorus matches in 1872; and Denmark in 1874, France in 1897, Switzerland in 1898, the Netherlands in 1901, Great Britain in 1908, Austria in 1909, Canada in 1910. It was only through the persistent efforts of Dr. John B. Andrews, acting for the American Association of Labor Legislation and the United States Bureau of Labor, that sufficient Congressmen were dissuaded from listening to the misstatements of self-interested manufacturers, calloused as to the preacordium, to get the example of more progressive and humane countries followed. The Diamond Match Company possessed a patent which would enable the comparatively innocuous red phosphorous to be used almost as cheaply as the white (at an additional expenditure to the average family of only five cents the year), which it offered to give up to its competitors if they would agree to abandon the white phosphorus process. But the latter declined the offer. Legislation was invoked. It was re-

The Occupational Diseases, by W. Gilman Thompson, M.D., Professor of Medicine, Cornell University Medical College in New York City. Illustrated, \$6.00. New York and London. D. Appleton and Company, 1914.

ported that at a Congressional hearing a flippant congressman, speaking in behalf of the manufacturers who held for the white phosphorus, derided the statements of the advocates of a humane bill. A workman with phosphorus poisoning was then brought in. His lower jaw had been removed by operation and the rest of his face was so rotted away that the funny congressman, affrighted by the ghastly spectacle fled the committee room. The bill was finally passed in July, 1912, making the manufacturers of white phosphorus matches economically prohibitive, and absolutely prohibiting their importation.

So the evolution of human wants and human whims has taxed ingenuity in the evolution of new machinery and apparatus such as is oftentimes most dangerous to the workman; new poisons are employed in the mechanical arts; insidious strains are exerted upon muscles and nerves; new psychic stresses are required; many factors have come to operate either immediately or insidiously, to injure the bodily structure or so to alter the activities of the human machinery as to affect longevity and mortality in a very striking and oftentimes in a very dreadful degree.

Thus have developed many occupational diseases or disorders not only serious in themselves but also predisposing to other afflictions. For example, that noble champion, Sr Thomas Oliver, M. D., through whose most humane activities much really effective Parliamentary investigation has been done, resulting in the control of many industrial diseases, enumerates in his fine book on *Dangerous Trades* at least sixty trades predisposing to tuberculosis—that Captain of the Men of Death, to whom every third or fourth white, and every other negro between adolescence and the fiftieth year, has been succumbing. In point of fact, it were an easily provable statement that many hundreds of occupations, teaming with vicious environment, make consumptives.

One may dwell here for a moment on the relation of efficiency (that slogan of modern business) to occupational diseases. A really scientific, worthwhile efficiency will produce the best possible results all around, advantaging not only one factor in the economic scheme, but mutually everyone and all. The "practical man" would here, perhaps, invite the reviewer to stick

to his quill and mind his own business, but even an "ornery literary feller" is entitled to ask if, apart from humane considerations, it is really a practical business proposition for 185,820 workers in the chemical trades to manifest 163,522 cases of occupational disease, with an average incapacity for work of 8 days per man. And it may further be submitted that a situation like that is everybody's business.

The capabilities of any inanimate, inorganic machinery—of wood, metal, leather and so on, with the amount of finished product that can be got out of it in any given number of hours, can be mathematically gauged, the expense of running a plant, the cost of the raw material, the freightage and the like—such factors are easily estimated. We should learn also to gauge the capabilities of the organic, the man-machine, which is the fundamental factor in the world's work, and yet anyone planning to secure mercantile efficiency that would claim to be scientific—really economic—has got to take into serious and sympathetic account the nature and the capabilities of the sentient, the human machine.

It is a spurious and not a real efficiency—preposterous economic waste, to say the least—to strain, "speed up" and exhaust unduly the workman, either he who toils the more with his brains or he who uses mostly his muscles. The fagged brain or muscle doesn't pay, because it is unreliable; and this in turn means wanton extravagance. And the manufacturer, who is now going to have to do with workingman's compensation legislation, will find it madness indeed to goad the tired minds or bodies of his employees beyond the normal limits.

The true scientific management will stop labor before fatigue reaches the stage of unreliability. And not only daily, but weekly exhaustion must be taken into account. A wholesome fatigue, which good food well digested and a good night's rest will recuperate, is the natural (and the blessed) state of man; but exhaustion beyond and without recreation (re-creation, making over) is unnatural and therefore until the human machine, the superb in the cosmos, must go before its time to the scrap heap; this is uneconomic because the longer any efficient man is on the job the more experienced he becomes; the work becoming routine results more profitably; the employee's experience becomes a valuable business asset to his employer; the troublesome and expensive breaking in of

new hands has less frequently to be gone through.

All combustion whether vital or inorganic is a combination of atmospheric oxygen with the elements (water and food, or coal) taken into the machine; in the one instance the body's discharges, in the other ashes or clinkers are the residue of the burning. Forced draught will the sooner and the more wastefully consume the fuel and wear out the machine, no matter of what kind.

The best surety against industrial accidents is an alert mind in a virile body; on the other hand the ideal predisposition to accident is an exhausted, run-down, devitalized human machine. In Europe they have scientifically worked out the relation between fatigue and accidents; with the result that the latter have been reduced at least fifty per cent.

Bank clerks make most of their mistakes in the late afternoon; this is one of the reasons why banks close early—the bankers have found their employees' mistakes too expensive. And every one knows what dreadful calamity results when railway men work continuously too many hours. A wise corporation, however selfish, will make its hours of labor of reasonable number; and indeed, it is most gratifying to observe that the essential parallelism of efficiency and

humanity is being more and more appreciated throughout civilization.

Thus then the subject of occupational diseases has come to cause potential interest in the minds of many men—physicians, scientists, economists, sociologists, business enterprisers, organizers of labor, insurance men, humanitarians, clergymen and statesmen.

Much restrictive legislation is being enacted, manufacturers are making practical efforts to preserve the health of their employees and to guard them against accidents; experts in sanitation are devising means for prevention or relief; physicians and social workers are co-operating in the gathering of much needed data on which to base national prophylaxis. To all such Professor Thompson's encyclopedic work is heartily commended. Well indexed and most informingly and abundantly illustrated, it is indeed the first American book of its kind, though we have many valuable monographs on various phases of the subject. Practically all other standard works of reference on occupational diseases are by English or Continental authorities. One may not close a review of this book without referring to the American Museum of Safety, which has been developed by Dr. Tolman, and which deserves the heartiest encomiums.

ALCOHOL AND THE MAN MACHINE. The human body, when it is in good health is, bar none, the finest, the most serviceable and the most enduring machine even created on this earth. But sometimes it gets wabbly in its mechanism, becomes unfit for its proper uses and breaks down long before it should in the natural course of events.

There is nothing sadder in life than to see the noble human machine go to the scrap heap at a time when it ought to be strongest and in its best condition. There are a whole lot of things that bring about this pitiful premature decay; everyone knows what they are and some have even felt them—want, disease, starvation, lack of warmth and sunshine, and so on.

But among all these destructive agencies by far the most vicious is alcohol. True it is that a body worn out by intemperance never reaches old age—if indeed it ever

gets much into middle life. How alcohol works so dreadfully upon those enslaved by it is explained by Prof. George B. Cutter in his book *The Psychology of Alcoholism*.

Our lives depend upon the right working of our nervous systems. And the nervous system is made up entirely of nerve cells and the fibres which go from them, just like telegraph wires, to every part of the body, no matter how minute. These nerves and their fibres are the most delicate and the frailest things in the body—and are therefore the easiest to destroy by a poison like alcohol. The human machine is regulated by its nervous system; and when this gets out of gear and breaks down the body is doomed to destruction. Such is the way in which alcohol breaks down the human machine. Besides working on the brain alcohol affects also the other organs and parts of the body—the blood and the ves-

sels, the liver, the kidneys and so on. But saddest of all these changes is the dethronement of reason which inordinate alcoholism brings about.

In this relation another book most heartily to be recommended is *The Question of Alcohol*, by Dr. Edward Huntington Williams (N. Y., The Goodhue Company). Dr. Williams considers most wisely the Drug-Habit Menace, Temperance Instruction in Public Schools and its Results, Liquor Legislation and Insanity, The Liquor Question in Medicine, and "What Shall We Do About It"; and the measures of reform he suggests will certainly commend themselves to those who do not make the mistake of confounding temperance with prohibition.

URINARY DISEASES, by Stephen H. Blodgett, M. D., Whitcomb and Barrows, Boston, 1914. \$1.00 net. In the excellent little book Dr. Blodgett has epitomized his lectures on urinary subjects delivered before various training schools for nurses. An especially good feature is the large number of receipts in which saccharin is to be used instead of sugar and the proportions of which were worked out by Alice M. Ellis, R. N.

THE APSLEY COOKERY BOOK, containing 503 recipes for the Uric-Acid Free Diet, by Mrs. J. L. Webster and Mrs. H. Llewelyn. New edition. \$1.40 net. London, J. & C. Churchill, 7 Great Marlborough street, P. Blakiston's Son & Co., Philadelphia, Penn.

To this excellent second edition fifty new recipes have been added and the old ones carefully revised. For those who cannot take sugar and do not like saccharin (and there are diabetic patients who cannot endure the latter) there are several new recipes for sweet dishes in which neither is used.

THE SOURCE, CHEMISTRY AND USE OF FOOD PRODUCTS, by E. H. S. Bailey, Ph. D., Professor of Chemistry and Director, The Chemical Laboratories, University of Kan-

sas, author of "A System of Qualitative Analysis," "Sanitary and Applied Chemistry," etc. 75 illustrations. \$1.60 net. Phila., P. Blakiston's Son & Co. "Tell me what you eat and I'll tell you the kind of man you are," observed some anonymous but very wise philosopher. Professor Bailey tells you in this superb work the nature of the fuel you are putting into your human machine and how best to make selection of such fuel as will ensure the best possible working of that, the most exquisite piece of machinery in the cosmos, with the least blocking of it and the least amount of clinking. In this book one will find collected the more important facts regarding what we eat and drink—such facts are not readily accessible to the public in any other way. The general principles of food production, manufacture and preparation are treated in such a way that the reader shall gain a practical knowledge as to what constitute the right food products and where such are to be obtained. And Professor Bailey well and most sensibly observes that only by knowing what good, wholesome food is, its composition and appearance, that we can hope for any improvement in the general food supply. "When this knowledge is widely disseminated public opinion will go far toward correcting any abuses that still exist in the food market; for pure food laws are but the crystallized sentiment of the united protest of the people against unwholesome and fraudulent products."

The therapeutic successes of the laying-on of hands, the king's touch, metallic tractors and mesmerism are fully explained by the doctrine of suggestion, the mental energy of the healer being transmitted as a therapeutic impulse from his subjective mind through the medium of the nerves to the affected cells of the patient's body, connection being established by "cellular rapport," that is, by bringing into physical contact the nerve-terminals of the two personalities.—Hudson, *The Law of Mental Medicine*.

NURSING DEPARTMENT.

EDITED BY FRANKLIN W. BARROWS, M.D.

THOUGH WIDELY DIFFERING IN FUNCTION, THE ULTIMATE AIM OF THE NURSE IS THE SAME AS THAT OF THE PHYSICIAN, THE RELIEF OF SUFFERING AND THE SAVING OF LIFE. CULTURE, HELPFUL INFORMATION AND A BETTER UNDERSTANDING OF RELATIONS, LEADING TO AN INTELLIGENT CO-OPERATION IN THIS COMMON AIM, ARE THE OBJECTS OF THIS DEPARTMENT.

WOMAN'S WORK IN WARFARE.

"WORDS are women, deeds are men," said George Herbert, who wrote in the era of our Pilgrim Fathers. Since his day, too, it has been the habit of our race to regard woman as a passive agent in all movements of social or political significance. Men contribute all the action worth notice in human progress; women supply a sympathetic background for the valorous achievements of their fathers and brothers, they serve to propagate and nourish the race, but for the strenuous work of the world they are too weak. "For men must work and women must weep."

Anatomy, physiology, and psychology all explain clearly why these things are ordained from the beginning. Our great scientists have placed their irrefutable arguments on record, and we might easily demonstrate woman's inferiority in action, if that were our purpose just now.

But, unfortunately for these theories, history seems to be modifying the conclusions of the past generation of scientists. We have the new woman, and she is to be accounted for in some way. In fact, we have several varieties of the new woman—a broadening expression of newness in woman, so it seems.

Only this summer, according to the *Berliner Klinische Wochenschrift*, a whole session of a learned society in Berlin was devoted to the consideration of the militant suffragette, from the scientific point of view, of course.

The phenomenon of militantism, said Marx, is an inversion of the seemingly natural passivity of woman, and is due to a certain immaturity of the brain, which is exhibited in the violent "short cut" toward a desired object. Violence has been termed the weapon of the weak. We are reminded in this connection of the young men of Greece, of whom the philosophers said that young men "use the harshest measures first." Marx absolves the women from hysteria. In passing, he mentions other types of femina militants, in which the natural passivity of the sex is inverted, and women have revolted against what they believed to be a withholding of their rights, but in the modern type it is the ballot alone which is sought.

In fixing punishment, each militant, Marx says, should be dealt with as an individual, and no wholesale penalties be carried out. Leppmann would not class the suffragettes indiscriminately as criminals. He would look into the components of imbecility and psychic infantilism. Strassmann classed the suffragette movement as a "crowd psychosis." Mass believed that no sane woman could die by hunger strike. Marx in closing said that the movement was a pathological development of neofeminism.

Whether the suffragette is a purely pathological phenomenon or not was left undecided by this meeting, but the *Medical Record* gives the discussion a very unexpected turn in their significant comment:

The question of feminine militancy is now, however, for the time being at least, a thing of the past, overshadowed by the militancy of hordes of the ruder sex. The woman has resumed her rôle of ministering angel and is devoting her energies to relieving as far as she may the suffering caused by the combatants in the larger war.

So it has come to pass that the new woman has a new opportunity, not of her own seeking, to demonstrate some of her claims to equality with man. We are told that the order has gone forth to stop all militant demonstrations until England has rest from her war on the Continent. If the suffragettes can and will stop their violence and control their desire for votes, while a greater problem faces the nation, they will be making a demonstration of considerable weight in the final settlement of their demands. There are men who do not credit them with possessing any degree of self-control or common sense.

But, after all, it is not to the militant that we shall look for those qualities that make woman most useful in war times. This is the time for the new feminism to manifest itself in deeds of service wherever women are found. The women of Europe are deemed worthy to harvest the crops that the men have left standing in the fields. It will be their sorrowful fate to reap the harvest of misery and woe that will follow the horrors of this uncertain war, for the misfortunes of warfare always rest most heavily on the women.

Knowing these things in advance, shall we not expect the new woman to deport herself in a new way? We are sure that the trained nurse will prove her value as an aid in maintaining the military efficiency of the warring powers. We do not forget that it was the military hospital and the barracks that brought out the best gifts of Florence Nightingale, and thus gave to the nurse a permanent place as one of the essential factors of civilization. Nurses today have an infinitely better opportunity than in the Crimean war, and much more will be expected of them. We are confident that they will prove themselves worthy, in courage and endurance, to stand by the

sides of the best medical men in the service of the armies of Europe. Our foreign medical exchanges are full of the stir of preparation. Many doctors and nurses have gone to the front; others are all ready and waiting for orders. Much as the war is to be deprecated and deplored, it is sure to bring out to the superlative degree some of the finest and most precious qualities of the women who have active parts to perform in the drama. Chief among them will be the nurses, and we believe they will prove, even more significantly than in former campaigns, their worthiness to rank with the very highest conservative forces of humanity.

COMMUNITY NURSES IN ILLINOIS.

THREE years ago the Illinois State Federation of Women's Clubs began a tuberculosis survey of the state. As the result of the state-wide interest awakened at that time, Miss Harriet Fulmer, formerly at the head of the Visiting Nurses' Association in Chicago, has been appointed as Extension Secretary of the State Association for the Prevention of Tuberculosis. Her method of extending the good work of her organization is described by Dr. Evans in his health column of the *Chicago Tribune*:

The central idea of Miss Fulmer's plan is to secure community visiting nurses. Sometimes a nurse is employed to look after an entire county. Sometimes a string of towns located along an interurban line will employ a nurse.

If the nurse looks after a county, the county supervisors are asked to pay a part of her salary. If she looks after a group of towns and villages, that portion of her salary to be paid by the gov-

ernmental bodies is prorated among the towns and the councils are asked to appropriate the necessary funds.

Town and country rural nursing service is now in operation in Richland, McLean, Livingston, and Morgan counties. In Livingston county Miss Fulmer enrolled 3,000 school children in the Livingston Open Air Crusaders. The rules for membership were:

- (a) Sleep with your window open.
- (b) Have fresh air where you work or play.
- (c) Breathe through your nose with your mouth closed.
- (d) Get the rest of your family to do the same.

Other sections of the state are falling into line. Soon the community nurse will be a regular part of the life of the people, and the state cannot fail to become the richer for having so capable an organizer as Miss Fulmer in the front of the fight against tuberculosis and its attendant misery and mischief.

THE SCHOOL NURSE.

IN every progressive school system the nurse is a worthy colleague of the teacher. In fact she is a teacher and she exemplifies, both by precept and example, the soundest principles of physiology and hygiene. These are her specialties and her *raison d'être*. Time is increasing the number and scope of her opportunities for teaching the lessons that are to result in a healthier race with a heartier interest in preserving national soundness.

Although the instructive article by Dr. Walker, in this issue of the *GAZETTE*, is ad-

dressed mainly to the medical inspector of schools and those who support him, we are printing it in this department for the special benefit of the school nurse. The doctor takes up some of the basic ideas in the medical supervision of school work. He is particularly helpful to the inspector of rural schools. Every nurse should read the article carefully as a means of wider information. As for the school nurse, she certainly ought to know these facts, for there is no telling when she may be called to take part in the very work that the doctor has been doing so faithfully.

A NURSES' HOLIDAY IN GERMANY.

WHAT the war means to doctors and nurses is indicated in this item printed in *The Hospital* for August 22, and referring to the German Hospital in London:

The German Hospital has lost half its staff of doctors and several of its nurses. The matron of the hospital has stated that five of the medical staff had been taken for the war and that nine of the nurses who were on holiday in Germany had not returned. The hospital, however, is still open

and has over 100 patients, including, as usual, several English, in the wards.

The novice, who sometimes finds the hard work of preparation for nursing rather irksome, has little idea at the time of the stirring events in which she may soon play her part. Those who prepare themselves most patiently and carefully are destined to the greatest usefulness in all times of stress and emergency.

ANESTHESIA BY RECTAL ADMINISTRATION OF ETHER.

THE injection of ether into the rectum is by no means a new method of anesthesia, as it was employed a number of years ago; it seems to have a revival in some quarters at present and it is to be hoped that those who are now trying it in place of the ordinary methods of giving ether will continue their experiments until they are prepared to speak more definitely of its value as a standard procedure.

Dr. H. Clifton Luke, anesthetist of St. Luke's Hospital, New York, in a well reasoned article contributed to the *Medical Record* presents a number of considerations that will appeal to any one who has any familiarity with the operating room and its uncertainties. As to the method and dosage employed in his hospital, he says:

The usual technique, omitting special refinements, is in brief as follows: Effort is made to thoroughly cleanse the intestinal tract, especially the large intestine, beforehand; a hypodermic injection of morphine, sometimes in combination with atropine or hyoscyne, is usually given one-half hour before injecting the ether; the mixture of ether and oil (olive oil being mostly used), containing about seventy-five per cent. ether in adult cases, is given in a single dose of six to eight ounces by volume very slowly through a small catheter into the lower bowel. This is injected about thirty minutes before operation, the patient being in bed until the unconscious state is reached. If surgical anesthesia is not obtained in thirty to forty minutes, more ether is injected per rectum or administered for a brief time by inhalation.

Can we say that this method is founded on a good scientific basis? In other words, is it exact or accurate? The administration of ether, to be exact within a reasonable meaning of the term, should have the dosage, or amount administered, under direct control, which in turn exercises a fairly definite influence on the dose or amount actually absorbed. This fundamental requirement does not appear to be fulfilled here: (1) because the entire dosage is estimated, and placed in the intestine for absorption before essential informa-

tion is acquired by the anesthetist regarding, (a) length of time the operation will take (which is often impossible to know), (b) the patient's resistance, susceptibility, or even special idiosyncrasy to the drug; (2) because a portion or all of the mixture may be expelled and lost, in which event an estimation of the amount still retained would be largely guesswork; (3) since there is also a small chance of error if the mixture is given in the usual manner by pouring through an open-topped funnel; over a period of five minutes material loss by evaporation could occur.

The Doctor discusses in detail the question of the absorption of ether administered in this way, and shows that, no matter how carefully the dosage may be regulated, there is no way of knowing how much of the anesthetic will be absorbed in a given time. In other words, a measured quantity of ether is placed in the rectum, but no one can tell, in a given case, how much of it will reach the cecum or how long time it will require to get there; and this is only one condition out of many which have to be considered. In summing up his opinions Dr. Luke says:

The advantages of the oil-ether method outside of its simplicity seem to be more apparent than real. In fact, with the possible exception of selected cases of bronchoscopy, it is difficult to see any indication for its use that cannot be as well and probably more safely met by the modern pulmonary methods. Its chief advantages are said to be found in surgery of the head and neck, since there is no hindrance to the operator in the way of anesthetic apparatus.

Even in these cases, however, he shows that the disadvantages of the oil-ether method more than outweigh its advantages, as is illustrated by the fatalities occurring under his own observation.

Some of the undesirable clinical features which, Luke says, must certainly be looked for in a method involving so many theoretical objections are the following: (1) the rather exhaustive and unpleasant experience accompanying any special rectal preparation, as required here; (2) the occasional necessity and inconvenience of prelim-

inary and subsequent proctoscopic examinations, as a matter of safety and caution; (3) occurrence during the induction period of cramps, with distressing sensations of fulness and pressure in the lower bowel, accompanied by desire for stool; varying degrees of anal irritation occurring early or late; (4) prolonged induction stage with frequent necessary recourse to the inhalation method; (5) any time after the first fifteen or twenty minutes' respiratory depression may rather suddenly or slowly appear, followed by arrested breathing, loss of muscular tone and dilated pupils, with the possibility of fatal syncope supervening; (6) the occurrence of mild to very severe grades of proctitis and colitis, these complications

appearing in more aggravated forms where any pre-existent pathological condition is present; (7) delayed recovery, which may be prolonged for many hours; (8) increased toxemia.

The author concludes very sensibly that any method of administering ether to children, old people, or cases at any age where there is more than the average risk, that does not provide for immediate and definite control, at all times, is certainly hazardous. He has shown us plenty of reasons for avoiding this method of anesthesia, and few, very few, advantages in it.

THE AMERICAN HOSPITAL AT NEUILLY NEAR PARIS.

UNDER this caption an American nurse contributes an illustrated article to the *American Journal of Nursing*, giving one a good idea of this most useful institution. We quote two paragraphs:

I have seen many hospitals, but it would be difficult to find a better managed or a more perfectly equipped little hospital than the one at Neuilly. I was there for two weeks and as a patient I was more than pleased with the care I received. During my convalescence it interested me, as a graduate, to see the working of the hospital. To me it fully equals, if it does not exceed, some of our best Ameri-

can institutions. Of course, the standard of cooking in France is superior to the average American cooking and I found the food nutritious and tempting. The tray service was well organized and the food was hot.

Altogether my sojourn there was as pleasant as it was possible to be under the trying circumstances of an operation. I now have forgotten all the discomfort, and think only of the good care and great kindness received there. One can hope that this hospital will continue to grow and prosper and that Americans in America will help on the great work, for Paris is a second home to many Americans and a number of our people are there at least once a year.

SURGEON-GENERAL GORGAS ON SANITATION IN SOUTH AFRICA.

At the invitation of the Transvaal Chamber of Mines, Surgeon-General Gorgas went to South Africa last December to look into the cause of the high death-rate from pneumonia among the native laborers in the mines of the Rand. He was asked also to recommend measures for reducing the death-rate and improving the general sanitary conditions of the mines and their surroundings. His report, which is printed in the *Journal of the American Medical Association*, is a valuable document, not alone for the information which it gives in well classified form, but as an example of what such a report should be. Dr. Gorgas' most unusual experience on the Isthmus of Panama, in studying the diseases of the negro workers and making the Canal Zone habitable for all nationalities, prepared him thoroughly for his work in Africa and made his recommendations of the greatest value.

The reports of the Native Affairs Department show that for natives employed in mines and industrial works in the proclaimed government dis-

trict of the Transvaal during the year 1903, the death-rate was 71.7 per thousand. This high death-rate has been steadily dropping till the present time. During the year 1912, for about 300,000 employees in the same area, the rate was 26.84. This rate is still very much too high, as we are considering men in the prime of life.

The death-rate among the negro employees working on the Panama Canal during the same year was only 10. Still this drop from 71 per thousand to 26 per thousand in the course of nine years is most encouraging.

In 1912 the total death-rate for diseases was 22.6 per thousand of the natives. Pneumonia led with a death-rate of 9.8; the next highest diseases were phthisis, meningitis and enteric fever. In discussing pneumonia, Gorgas says:

Pneumonia is a disease in man due to infection by a particular organism—the pneumococcus. Individuals and races differ widely in the degree in which this organism affects them. Some races, like the white, resist infection strongly. Others, like the negro, have less resistance. Those races with less resistance acquire a much higher degree of resistance after long exposure to the infection. The negro when brought into a community in which pneumonia prevails acquires nearly as high a degree of resistance as the white man.

we take 100 white men and examine them, we shall find that twenty or thirty have virulent pneumococci in their throats. When one of these individuals becomes much depressed from any cause, such as exposure to cold, starvation, severe sickness or any constitutional strain, he is liable to develop pneumonia. If we bring the unacclimatized negro into contact with such persons or other infected negroes, he gets the pneumococcus in his throat and secretions in the same way. The white man, by long exposure to this pneumococcus, having constant slight colds, sore throats, etc., has acquired more or less immunity to the organism. The negro, when he first comes in contact with the pneumococcus, has none of this immunity. Expose the two men to the same depressing agency, give them both a bad cold, for instance, and the white man, through his immunity, resists the pneumococcus, while the negro does not. The organism obtains an entrance in the latter case, and the man succumbs to pneumonia.

If we take a community composed of persons who have had little exposure to the pneumococcus, we shall find a high mortality-rate from pneumonia. If the community is made up of persons who have had prolonged exposure to the pneumococcus, we shall find a low mortality-rate from pneumonia.

We find for the year 1912, that the 21,000 tropics had a death-rate from pneumonia of 26.30. But the 199,000 non-tropics had a rate of 8. In general, the tropical is the non-civilized native who has had little contact with the white man's diseases and the non-tropical, the native who has had more or less contact with civilization—and the white man's diseases.

In general, therefore, a community which has had a large proportion of tropical natives will have a high pneumonia death-rate, and a community with a large proportion of non-tropical natives will have a low pneumonia death-rate.

This is a general rule to which there are individual exceptions, as is always the case in infectious diseases.

The death-rate for pneumonia among the black employees of the Isthmian Canal Commission in 1906 was 18.74 per thousand, which is higher than the death-rate for this disease among native employees in the Proclaimed Labor District of the Transvaal for any year since 1909.

In attempting to reduce this death-rate Gorgas instituted a thorough study of all the influences affecting this disease in the Canal Zone. Without entering into the careful analysis given in this report we will quote the brief summary made by the *Journal*.

Altitude, ventilation and the effect of sleeping in wet clothes were in turn examined as possible predisposing causes, but in each instance with negative results. "The only difference in susceptibility was shown to be governed by the length of time that the laborer had been on the Isthmus." Pneumonia was four and one-half times as frequent among the men who had been on the Isthmus less than three months as among the men who had been on the Isthmus more than three months. In the Panama Canal Zone, however, the pneumonia-rate did not remain high. The pneumonia death-rate figures are: 1906, 18.74; 1907, 10.61; 1908, 2.60; 1909, 1.60; 1910, 1.66; 1911, 2.24; 1912, 1.30. Now the significant fact is that

the sudden and remarkable drop after 1907 was coincident with a radical change in the manner of living. In 1907 the negro laborers were allowed to scatter out along the line of the Canal to "build each man his hut, with a small cultivable piece of land, and bring over his family." It is evident that under such conditions the opportunities for the transfer of pneumococci from carriers to non-immunes are much less favorable than under the barrack system. Gorgas definitely attributes the sudden and permanent drop in pneumonia on the Isthmus to the scattering of the negroes in independent dwellings.

Applying these facts to the Rand situation, the conclusion is drawn that the high pneumonia-rate on the Rand is due to the same factor of barrack overcrowding which was apparently responsible for the initial high pneumonia-rate on the Isthmus of Panama. In accordance with the Panama experience the recommendation is made that so far as possible the negro laborers be allowed to bring in their families and live with them in individual buildings. Where this is not possible much roomier native quarters should be provided. The present allowance (about 14 feet of floor-space!) is much too limited.

Those who believe that housing is a matter of real sanitary importance will find support for their views in Gorgas' opinion as to the influence of the crowded quarters on the Rand. "The general objection to such crowding is that it causes the respired air to become vitiated. My great objection to such crowding is that it forces the occupants into close personal contact, and therefore largely increases the spread of any infectious disease."

Turning again to the report we find these practical observations well worth repeating:

In considering preventive measures it must be borne in mind that the causative agent in pneumonia is the pneumococcus, an extremely delicate micro-organism; when exposed to external influences, such as sunlight and drying it is killed in a few minutes, but when resident in the respiratory passages of those infected it lives for weeks and months.

Persons recovering, or having recovered, from pneumonia may, and usually do, carry virulent pneumococci in their mouths and respiratory passages for long periods, and may infect others indirectly by means of their sputum, or by infecting the drinking- or eating-utensils used by several persons in common, or by infecting the common water-tap or cup. It has been observed that natives when drinking from the water-tap place it in their mouths, and in this way may leave a moist film of infected spittle on the tap to be taken up by the next person using the tap. In the mines, one tap has to serve for many laborers on the level, and personal observation has shown the facility with which a line of thirsty natives may become mutually infected.

Not only are pneumococci transferred in this way from persons who have recovered from pneumonia, but it is most probable that pneumococci are acquired similarly from persons suffering from the "common cold," tonsillitis and other forms of inflammatory disease affecting the upper air-passages.

It is highly desirable, therefore, that means should be used to prevent as far as possible such conveyance of infection as is indicated above. This might be done effectively and economically

by means of some of the well-known types of "bubbling" fountain, or protected taps. These taps prevent the dissemination not only of pneumonia, but also of tuberculosis and syphilis.

The report recommends vaccination against pneumonia as worth a trial; where it has been employed on the Rand it has proven its value in some cases. As for typhoid fever, it could be entirely wiped out at once by vaccination. All native employes should be vaccinated for typhoid fever.

Housing, diet, sewerage, water supply and the fly nuisance, are all discussed, and recommendations are made in accordance with which the living conditions of the natives could be much improved. The suggestions concerning tuberculosis are in accord with the best usage in our own country:

Tuberculosis is caused in man by a well-known micro-organism, the *Bacillus tuberculosis*. This bacillus can be transferred from person to person in many ways. The most common way is by the sputum of the diseased person. This sputum is expectorated, dries, becomes pulverized, and the bacilli are blown about, and enter the lungs of the well person. Or, without drying, it can get on the hands of others, and thus be transferred to the mouth and enter the system. The greatest preventive measures are therefore concerned with the care of the sputum. White miners having tuberculosis should be eliminated; if elimination is not possible, they should be supplied with spit-cups, or cloths into which they can expectorate, and be individually furnished with literature explaining the danger of promiscuous expectoration. With the native miner any attempt of this kind would be impracticable. Careful routine medical examination should be made of the sick, and when a man is found to have tuberculosis he should be excluded from the mines. As far as the native is concerned, the most important single measure is that recommended for pneumonia, that is, scattering, and in the same way as recommended for pneumonia.

Disinfection in the dwellings of the tuberculous is useful and important, and should always be resorted to.

The fifty-four mines on the Rand have now sixty-two hospitals which care for 2,150 patients. There are thirty-eight physicians. "The nursing force in native hospitals is made up of natives who have neither the intelligence nor training for such work," and, in general, the hospitals are poorly equipped and the doctors overworked. This condition could be improved by having fewer hospitals and equipping them in the very best modern style, as has been done on the Isthmus. "With

200 white trained nurses, male and female, in such an institution, you could select your subordinate native nurses from the more intelligent and better educated natives, and thus secure a first-rate nursing force."

Gorgas is very positive in his views on the liquor question. For several years they have been closing saloons in the Canal Zone, "generally at the request of the engineer in charge of the working force," until last year liquor selling was finally abolished in the entire Zone. This is his recommendation for South Africa:

"Alcohol for the natives, I believe, is an unmitigated evil. It is in no way necessary for his health; in fact it is always hurtful. . . . The two Panama towns of Colon and Panama, at the northern and southern end of the Canal, are not under the jurisdiction of the commission as far as regards liquor-selling. There is no restriction on an employee going to these towns and getting liquor as he wishes and bringing it out into the Zone to his own home. The only prohibition is that it must not be sold in the Zone. But to get liquor he has to make a longer or shorter railroad trip, and go to considerable effort. Our experience has shown that there are a considerable number of men who do not care enough for liquor to make the effort, and therefore do without. Of course, there are a large number who bring liquor out and drink as much as ever; but on the whole, our prohibition of its sale has largely decreased drunkenness. It has increased the efficiency of our working force so much that generally the men in charge of the laborers in the different districts have asked to have their districts included within the prohibited area. I believe that it would be best for the native on the Rand to have no alcohol at all."

This report is of special significance because it comes to us along with the welcome news that the University of Oxford has recently conferred upon Surgeon-General Gorgas the honorary degree of Doctor of Science. The University Orator, in presenting him for this degree, paid him this distinguished tribute, in choice Latin, which is translated for our benefit:

"The eminent American whom you see to-day has, like many of his countrymen, fought in the forefront of the battle. His achievements are too numerous for me to relate in detail. Suffice it to say, that it is he who cleansed Havana; it is he who put fever and pestilence to flight in the Isthmus of Panama, and made possible the long-thwarted construction of the great inter-oceanic waterway; it is he who has recently improved the sanitary conditions of the South African mines. He purified foul air; he waged war on the myriad swarms of death-disseminating mosquitos. The result has been an amelioration of the conditions of human life in plague-haunted districts, where once 'in silent fear the helpless healer stood,' and it is now possible to live in comfort and to work with advantage. There can be no better example of those 'Whose skill hath served the human lot to raise, and won a name that endless ages praise.'"

SCHOOL INSPECTION AND SANITATION.

By R. A. WALKER, M. D., WEST MONTEREY, PA.

AN imaginative artist has depicted the course of human life, as a procession making its way across a bridge, extending over a wide and seething flood. At its broad portals, a crowd of infants press closely upon one another's heels, full of life, and eager for the joy of living. At once, however, it is seen that those near the edge of the footway are being crowded off, and fall into the abyss to perish untimely. The rest rush on, heedless of the fate of their companions. As they grow in stature they decrease in numbers, until, by the time adult life is reached, a sadly diminished proportion of the teeming multitude that started to cross the torrent, is still holding on its way. At last, only a scattered remnant of tottering old men and women are left to take a final plunge from the crumbling arch that stretches out in ruins over the black waters.

Is this allegory a fancy picture, or is it a stern reality, that is being enacted before our eyes? We must, unfortunately, admit the latter.

A study of vital statistics as preserved in civilized countries for the past century, leads to the conclusion that this wholesale slaughter is not a part of Nature's plan, but the result of neglect on the part of man, as has been proven by experiment, where disease has been forced out of certain countries by man's effort, and countless thousands of endangered lives saved. I refer to the wonderful work for the conservation of human life performed through the investigation and discoveries of that quiet band of indefatigable workers, the bacteriologists. To them we accord the honor and praise of giving us the means of knowing the cause, and consequently the cure of many of our most fatal diseases, such, for instance, as malaria, and yellow fever, being transmitted to man by the mosquito; the plague, by the rat flea; sleeping sickness, by the tse-tse fly; leprosy, by house vermin; and the important part played by the common house fly, in the spread of typhoid fever and many other diseases.

The Department of Health of the state of Pennsylvania, was established under an act of Assembly at the session of 1905. It now has been in active operation less than six years, but in that short time

has done wonders in the conservation of life, and the beneficial effects are only beginning to be felt.

In the year 1906 the death rate in Pennsylvania per thousand persons was 16.5. In 1908 it had fallen down to 15.3, and in 1910 to 14.7. What the future will show remains to be seen. Had the death rate remained the same as in 1906, it would have meant the death of 13,907 persons; hence the saving of life meant the same number.

The death rate of Pennsylvania for the year 1910, the last available data, was: Total deaths from all causes, 112,246 persons, of which number 26,643 were under one year of age, or 24 per cent. of all deaths; 5,820 were less than two years of age, or 5 per cent. of all; 2,502 were between the ages of 2 and 3 years, or 2 per cent. of all; 1,528 were between the ages of 3 and 4 years, or 1.3 per cent. of all; 1,065 were between the ages of 4 and 5 years, or 0.9 per cent. of all; making a total of deaths of children under five years of age of 37,558, or 33 per cent. of all deaths in the state for that year. Then, between the ages of 5 and 20 years, there were 11,796 persons died during the same year, making a grand total of 49,354 deaths, or 44 per cent. of all deaths, coming, we might say, from the school children of Pennsylvania.

As we heretofore said, the conservation of life during the 4 years of active work of the Health Department was 13,907. This fact has an immense personal meaning for all the people of the state of Pennsylvania. Among those rescued lives may have been yours, your wife, or child. But to get down to the mercenary side of the question, political economists tell us "That the most valuable kind of wealth of a state is human life, that human labor is worth at least five times that of all other kinds of capital."

Professor Fisher, of Yale College, has very painstakingly figured out the financial value of every citizen of the state at various ages, as follows: He says, "A new-born baby is worth, to the state, \$90." Now, this does not mean what we think it is worth, for I know some babes that could not be bought for 90 millions. At five years the child is worth \$950; at ten years \$2,000; at twenty years \$4,000;

at thirty years \$4,500; after which the values go down in proportion to age, but averaging about \$1,700 each.

Taking life at this price the state health department has therefore saved the state in money value over twenty-three and three-fourths millions of dollars. Now, during this time, the Department has expended only \$3,000,000, or about \$7 per life saved. Was it worth it? Answer by asking if your own life is worth that much.

And yet we find many people complaining of the terrible expenditure of money by the Health Department, when, if the truth were known, the fellow who shouts the loudest, pays the least State tax; for be it known that only one person out of every 37 in the state pays a State tax, and some of those try to dodge out of their share by lying about how much money they have on interest.

We trust you will bear with us just a minute longer, while we follow out these health statistics a little farther, as I desire to show you a point which I am after, later on, and prove to you a statement that may now seem impossible, but may be demonstrated to be a fact, years from now, that is, the matter of the complete banishment of disease.

As we previously said, the department has been actively at work four years. I now desire to name a few of the most prominent contagious diseases of our state and of your locality to show the decrease during this short period of four years, and thereby prove what sanitation and prevention will accomplish.

During 1910 we had deaths from the following diseases with the percentage of decrease, to wit: Tuberculosis, 10,211 deaths, a decrease of 6 per cent. over last year; Typhoid Fever, 2,450 deaths, a decrease of 30 per cent. over last year; Malaria, 99 deaths, a decrease of 20 per cent. over last year; Diphtheria, 1,970 deaths, a decrease in four years of 70 per cent., caused mainly by the free use of antitoxin, since the Department was established; Whooping Cough, 1,264 deaths, a decrease of 6 per cent. over last year; Measles, that harmless little disease, considered so harmless by so many that it is unnecessary to call a doctor, yet it called away 1,215 patients, almost all being babes, to whom it is very fatal. Smallpox, not one single death, and only one the previous year. Why? Simply because we

have been hammering away at that disease, to banish it, for over one hundred years, and we have won out in Pennsylvania.

Now, this is my point: If smallpox, that dreadful disease that is nearly depopulating parts of the globe at the present time, can be banished, why not all other diseases also? And yet you find some people trying to prevent the vaccination of their children by resorting to the law.

Now I want to recapitulate some of my former figures, and show you that our public schools are being depopulated by this dreadful loss of life, so that we should wake up to the great matter of life conservation. Of the deaths from tuberculosis last year, 16 per cent. were of school age; of typhoid fever, 47 per cent. were from the schools; diphtheria, 87 per cent.; scarlet fever, 93 per cent.; and measles, 17 per cent., this small percentage being on account of the fatality to babes under school age. So, we could go on with this matter of statistics for an indefinite time, but I know figures are dull and uninteresting, even when given to medical men, and we desire to get down to the subject assigned, that of school inspection and sanitation.

When the last legislative session was held and the school laws were being remodeled entirely, by the adoption of the new school code, much fault was found with the clause regarding medical inspection of all school children. Many cities before this time had city ordinances to that effect, but now a state-wide law was desired. The friends of school inspection wanted to make it absolute and compulsory to all. But such a heated debate was brought on, that it came near defeating the entire code. After a long controversy a compromise amendment was agreed upon and passed, leaving it optional with the various school boards to say whether the inspection should be made or not. But in all cases where it was made it was to be paid for by the state.

Whether this clause was misunderstood, or whether it was intentional, I do not know, but the result was that very few of the school boards ordered the inspection to be made. Some boards expressed themselves as against such nonsense, and passed it over. Those who wisely decided to have the schools of their districts inspected were delighted with

the results. I had the honor to be appointed by the Health Department of the State examiner for two townships, one in Clarion County, and one in Armstrong County, and I am free to state that I was very much impressed with the necessity of the inspection before I was half through with the first school. Had any one told me before I began that one-half or even one-fourth of the pupils of any one school were defective, I would not have believed it. But such was the case, not only in one school, but in nearly every one examined. One school in Armstrong County showed 60 per cent. defective. Pupils were inspected that were so defective in eyesight that they could not see the largest letters on the test sheet at 10 feet, the letters being 4 inches square.

Notices of these inspections were sent to each teacher, with instructions to read them in school, cordially inviting the parents and directors to be present. Some few availed themselves of the invitation, and gave evidence by their interest and remarks that they appreciated the worth of the work on the part of the state. In some districts not one visitor appeared. But I dare say, if the notice had read, "Prof. Jayhawk will give a free lecture on the diseases of horses and cattle" in the school house on that day, every "mother's son of them" would have been present. If a \$200 horse or a \$50 cow was in danger, interest would have been aroused at once, but a \$2,000 child was neglected.

The inspection consisted in a personal examination of each pupil present as to:

Sight,	- Near- or far-sightedness, - Corneal defects, - Inflammation of lids and ball.
Hearing,	- Degree of deafness, - Discharge from ears and its character.
Lungs and Nose,	- Sounds in lungs, - Breathing, nose or mouth, - Adenoids in nostrils, - Polypoids in nose, - Enlarged turbinate bones.

Teeth, clean, unclean, decayed.
Tonsils, enlarged, degree; inflamed.
Nervous symptoms, chorea, epilepsy.
Skin, eruptions, crusts on head, or lice.
Deformities, enlarged glands, nutrition, etc.

The inspection as to sanitation consisted in examination of:

School Building,	- Condition as to cleanliness, - Light, Heat, means used, Ventilation, - Condition of cellar, if one existed.
Water Supply,	- How obtained, well, spring, hydrant, - Purity of same, - How dispensed, cooler and spigot, covered bucket, - Open bucket, cup dipped in bucket, - Bucket clean, or dirty, - Individual drinking cups.
School Grounds,	- Evidences of pollution, - Out-buildings, clean, filthy, dividing fences, - Sanitary condition of same.

Drainage of grounds, wet, dry or muddy.

The examination of each pupil was gone through with as heretofore stated, with unlooked for results as to the number of defectives, and duly reported to the department at Harrisburg. I feel sure that some of the parents have heard from the Health Office, as I see some of the children wearing glasses who did not do so before.

But these inspections have their puzzling problems to overcome. Many parents are either too careless to call on a doctor or dentist to correct the defects found, or are not in sympathy with the movement, I do not know which; hence the prime object of the medical inspection in that case is lost. In some few instances physicians are not in sympathy with the movement, and that is a serious hindrance. However, it is simply alarming to see so many children in school with their naso-pharyngeal cavities filled with adenoids, their throats almost closed with large tonsils, and teeth so badly decayed that pus can be pressed out of the gums, resulting usually from the primary teeth not having been removed, and the permanent teeth coming out beside them.

Let me digress at this point for a moment. Regarding the condition usually known as enlarged tonsils, a condition frequently to which very little attention is paid, let me say, no organ in the body to-day is looked upon with any greater suspicion of being a mischief maker, than the tonsil. Professor D. J. Davis, of

Chicago, a specialist on diseases of the throat, has this to say on this subject, taking 100 cases, unselected, as they came into his consulting room, and securing some of the secretion from the tonsil of each one, on microscopic examination he found the following conditions: In 56 cases he found germs of tuberculosis; in 14 cases he found germs of typhoid fever; in 11 cases he found germs of diphtheria; and in four others he found evidences of approaching cancer. Now, by this examination we do not presume to say that all of the 56 cases out of this 100 had tuberculosis, but the germs were there, and if they found a lodgment in the proper culture media, tuberculosis would be the result, undoubtedly. So, from this one example, you can readily see the great necessity of vigilant care against the communicability of disease by this route, and especially by the use of the common drinking cup.

One of the most important things to be inquired after was the water supply, how obtained and how dispensed. Was it pure, was the well or spring in close proximity to stables, cesspools, or surface wash, had the pupils individual drinking cups, was the water bucket clean? In only one school was there any effort made toward sanitation in this matter. In one double school, I found at the door on the outside a large earthen tank with spigot at the bottom, and I was informed the tank was washed frequently and refilled each day, and that every pupil had a cup of his own; and it was a punishable offense to lend your neighbor your cup. Many schools had a dirty, old, rusty bucket, that, if it had been washed this year, its looks denied the imputation. One tin cup of uncertain age completed the outfit of the water plant. At one school I saw this,—I hope you will pardon my mentioning such a revolting sight, but I want to drive home this point, for the purpose of having it remedied,—a large, very filthy boy (so filthy that I reproved him for his condition when I examined him), walked up to the old, dirty bucket, dipped out a cup of water, drank a little of it and set it down; soon a little girl came up, poured back what was in the tin, and dipped out some for herself and drank it. In this same school we found several cases of tonsillitis, and what was there to hinder the whole school contracting it under the circumstances? And

so is many another contagious disease disseminated in like manner.

The springs from which the water supply was obtained, were little removed from filthy pools, surface water, and were covered with leaves, sticks and dirt. When it rained the wash from the surrounding territory was flooded into the water supply.

So, by this description, you may infer that the result of my experience in school ground inspection was far from satisfactory, not only as to sanitation, but decency. The law specifically prescribes what the duty of Directors are regarding closets, but in not a *single case* did I find the law complied with.

Another, to my mind, common source of infection by one pupil to another, is the extremely filthy condition of the books, as found in many of the country schools. Books are handled and used by the scholars indiscriminately from year to year, as long as they hang together. They must certainly be positive carriers of contagion, children many times not only handling those dirty books, but nibbling at the corners, breathing into them, and afterwards, passing them to some other pupil to be used likewise. I feel sure, while this item is not included in the list of inspection matters, yet it calls, and calls loudly for reform.

One of the leading educators of this state makes this trite and true saying, "Remember that the *whole child* goes to school, not only the brain for training, but the body as well." How necessary, then, is school inspection of the body, as well as training of the mind. Consider, also, the positive necessity of having proper surroundings to produce healthy bodies.

We are told that the United States weather bureau saves millions of dollars for the ship owners, farmers and fruit growers, by raising the storm flag, and by issuing, from time to time, bulletins foretelling the weather. So with school inspection, reporting one case of diphtheria, or other contagious disease, may save numerous lives, to say nothing of losses by quarantine, doctor bills, and probable incurable effects from disease.

Medical inspection aims at both protection to the community, and the physical conditions of the pupils of our schools. To ascertain the latent capacity of the individual pupil, and gauge the labors of

that pupil as to capacity. A cast iron code as to a definite standard of work to be done each term by pupils of varying capacity, cannot fail to produce mental overstrain, and nervous disorders leading up to serious, if not fatal results. The average school life of the pupils in our schools to-day is too complex and difficult for the average scholar. There are too many subjects for study in a limited time. This has a tendency in many children to produce unbalanced development and nervous irritability. More systematic attention should be given to individual training, and less to large class teaching. Then fewer pupils would fall down in class examinations.

But, my friends, what can you hope to accomplish when all, or nearly all, of the beneficent laws passed by our law makers for the benefit of the health and well-being of our children, are set at naught by the school boards of, especially, our country districts, where the children are compelled to sit on improperly constructed seats, set at too great a distance from their desks, causing bad posture. Illy ventilated, and poorly lighted rooms are found, rooms either super-heated or not heated at all, schools ungraded, where the bright precocious child is classed with the dullard, the hyper-sensitive and the degenerate pupil, all under the care of an innocent and inexperienced teacher, whose knowledge of mental philosophy is nil. The school boards are often composed of an incompatible mixture of educators, farmers, politicians, and worst of all, professional township or town office seekers, whose sole aim is to get the term through on the least possible outlay for books, salaries and coal, in order to keep down the tax levy. Now, we as physicians could often lend helpful advice in the corrections of the evils I have referred to, but we are never consulted and if we volunteer our advice, we are looked upon as meddlers, and are misunderstood. Even when we advocate school inspection, it is said we are talking for our own financial benefit.

A great responsibility rests upon you, my fellow-members of the medical profession, and upon you, as citizens and parents, to aid the inspector in making the medical examination of your children of effect. His duty is performed when he calls your attention to the defects of your child. For the Health Department in no

case allows him to suggest any treatment. It is up to you, as parents, to see to it that the child is taken to the family physician or specialist, as the case may be, for proper treatment.

In conclusion, let me say, the main object of this paper is to make a general appeal, not only to the medical profession, but especially to the laity, to urge the movement for school inspection and school sanitation, knowing as we do, the great value of detecting and checking diseases and defects in children at the onset, for we firmly believe there are thousands of people abroad in our land to-day, chronic invalids from disease and defects once curable or preventable, who are now hopeless and permanent physical wrecks.

At the present time the subject of public sanitation is much talked and written about, and we believe the time is near at hand when it will be actively taken hold of by the National Government and the "Owens bill" now before Congress, which provides for a national Department of Health, or some other similar measure, will be enacted. It is estimated, and probably true, that more than one-half million people die each year in the United States from preventable or unnecessary diseases, causing an expense for death, sickness, and other losses that is simply beyond our comprehension.

Gratifying as these results are, and that most gigantic engineering problem of modern times, the Panama Canal. France gave it up, not for lack of money or energy, but because they failed to make the locality a fit place for working men to live. To-day, under modern American methods of sanitation, this region is fast becoming a desirable winter resort for our tourists.

On the basis of the French mortality, while they were struggling with the canal problem, had the conditions remained the same, 8,000 persons would have died of yellow fever during the five years our Government has been in control, yet, under their strict sanitary rule, just nineteen persons have lost their lives from this cause.

An object lesson in public sanitation on land, where their efforts are badly needed. Let us hope that it will not be long before our national legislators will be led to see the great need of preventive legislation against disease, that will bring wonderful demonstrations so far away,

we are sorry our Government makes such a large scale showing what can be done, proud as we must be that this triumph was brought about by our country, yet

in the experience of the United States in leaving so many plague spots in our home is at present before the eyes of the world about these much needed results.

HOURLY NURSING.

THE Central Registry maintained by the New York County Registered Nurses' Association announces the establishment of an "Hourly Nursing Service" for those who require the skilled attention of a trained nurse to administer certain necessary parts

of the treatment, but who do not need to go to a hospital or to have the constant care of a trained attendant. Inasmuch as the charge is only seventy-five cents per hour, it is certain that this service will meet with a hearty welcome from both physicians and patients.—*Medical Record*.

HELPING THE PATIENTS.

A recognition of the usefulness of crippled or convalescent patients led to the establishment of a cement shop by the Massachusetts General Hospital at Boston, in the basement of the out-patient department. Here men suffering from heart trouble or temporary disability which requires their daily presence at the hospital, may earn a little money at light work.

Vases, candlesticks and tiles are made in cement under the supervision of a trained worker and marketed at private sale. The hospital gets one-third of the selling price in payment of the materials used, the outside agency gets one-third and the man one-third. If sold at the hospital, the man receives two-thirds of the money.—*International Hospital Record*.

Questions and Answers.

THE following answers are not official. They are prepared for the Editor.

UNIVERSITY OF THE STATE OF NEW YORK, 21ST NURSES' EXAMINATION.

BACTERIOLOGY AND SURGERY.

Thursday, January 29, 1914—9.15 a. m. to 12.15 p. m., only.

Answer 10 of the following questions. Each complete answer will receive 10 credits. Papers entitled to 75 or more credits will be accepted.

1. Why is it necessary to repeat, at least once, the process of sterilization of normal salt solution?

Ans. To allow time enough for the development of the spores that escape death by the first sterilization. Within the first twenty-four hours most of these spores develop into bacteria, which are killed by the next sterilization.

2. Define immunity.

Ans. The state of being protected against the invasion of any particular disease.

3. Mention *two* means by which immunity may be acquired.

Ans. By having a contagious disease and recovering from it; by inoculation.

4. What is the most important measure used for controlling the infection of milk?

Ans. Strict cleanliness from first to last.

5. Define healing by first intention.

Ans. Union of wounded parts without any resulting scar.

6. What preparation of the field is necessary in the application of plaster bandages?

Ans. Cleanse and cover with a bandage of flannel or cotton wadding, or a close fitting stocking, placing extra pads of cotton over bony prominences.

7. Describe a course of procedure if secondary hemorrhage should follow the removal of tonsils.

Ans. Keep head elevated. Give ice by mouth. Apply adrenalin chlorid or tannic acid as directly as possible to bleeding points. Apply ice to the neck. Make pressure over the common carotid artery in severe hemorrhage.

8. Mention *four* classes of wounds.

Ans. Contused, incised, lacerated, punctured.

9. To what is discoloration of the tissues following an injury due?

Ans. Extravasation, or escape of blood from the circulation into the tissues affected by the injury.

10. Define (a) septicemia, (b) pyemia.

Ans. (a) Disease due to the presence in the blood of pathogenic bacteria and the poisons which they generate. (b) Pus in the blood, or septic infection of the blood with pyogenic germs, resulting in secondary abscesses.

11. Briefly describe the essentials in the nursing care of a patient who has undergone the operation of tracheotomy.

Ans. The air must be kept warm and moist by regulation of the temperature of the room and use of a croup kettle or other vaporizing apparatus, under a tent, if necessary. The tube must be kept free of discharges by cleaning with a feather. Patient must be watched closely to prevent asphyxi-

ation by the choking of the tube. If necessary, tube must be removed and wound held open to allow patient to breathe until help arrives. Careful nursing is needed in all details.

12. How may the green of adhesive plaster be removed from the skin?

Ans. If the question refers to the gummy substance adhering to the skin it may be removed by saturating it with a light oil, rubbing well, and removing the residue with a few drops of ether, again rubbed off.

13. Name *three* of the most important points to be observed in the care of surgical instruments after operations.

Ans. Account for every instrument provided for the operation. Cleanse carefully, rinsing in boiling water. Wipe thoroughly and put each instrument in its place.

14. What care must be taken when making solutions of carbolic acid? Why?

Ans. Shake or stir the solution very thoroughly until every drop of the pure carbolic acid is completely mixed with the water. Because the pure carbolic acid does not mix readily with water, and if any drops are left in the solution they are likely to cause severe burns when used on the body.

15. Why does alcohol not disinfect if used stronger than 70%?

Ans. Because strong alcohol coagulates albumins and thus protects some of the bacteria which it is intended to destroy.

DIETETICS.

Thursday, January 29, 1914—9.15 a. m. to 12.15 p. m., only.

Answer 10 of the following questions. Each complete answer will receive 10 credits. Papers entitled to 75 or more credits will be accepted.

1. To what classes do the following foods belong: (a) beef, (b) potatoes, (c) eggs, (d) lettuce, (e) butter?

Ans. (a) Animal proteid, (b) carbohydrates, (c) animal proteid, (d) green vegetable, containing organic acids, mineral salts and a minute proportion of proteid, fat and carbohydrate, (e) animal hydrocarbon.

2. What digestive juices are involved in the digestion of *each* of the above foods?

Ans. (a) Gastric and pancreatic juices, (b) saliva, pancreatic juice and succus entericus, (c) gastric and pancreatic juices, (d) all the digestive juices, (e) pancreatic juice.

3. Name *three* kinds of food that should in general be eliminated from the diet of the sick.

Ans. Fried foods, highly seasoned or spiced foods, greasy combinations, such as hot, starchy foods with melted butter or gravies.

4. What is the difference between cocoa and chocolate?

Ans. Most preparations of cocoa contain less fat than is found in chocolate. Chocolate is prepared from cocoa by the addition of sugar and flavoring substances, especially vanilla. As it contains more fat it is richer, usually, than cocoa.

5. Why is human milk more easily digested than cow's milk?

Ans. Because it is adapted by nature to the human stomach while cow's milk is

adapted to the calf. The chief difference seems to be that cow's milk forms a coarse, tough curd in the stomach, while the curd of human milk is soft and flocculent.

6. Give the relative per cent. of fat and proteid in 7% top milk.

Ans. In 7% top milk the percentage of fat is almost twice that of proteid.

7. Give menus for *three* meals, with a special view to increasing bodily weight in a person who is otherwise healthy.

Ans. Breakfast: Tea or coffee with milk and sugar; bread, rolls or toast with butter; cereal or rice, with cream or milk; eggs with bacon, or omelet, fresh fish, steak, chops or tripe; potatoes; fresh fruits in season, or cooked apples or prunes.

Dinner: Soup or puree; fish or meats, without frying or high seasoning; potatoes, rice or macaroni; fresh vegetables; simple salads of green vegetables; rice, tapioca or cornstarch pudding, or custard, or ice cream, or fresh fruit dessert.

Supper: Bread or toast with butter, or milk toast, or bread and milk; eggs; stewed or baked fruits, or fresh fruits in season; milk or cocoa.

Buttermilk may be taken with any meal.

8. What is the chief dietary value of fruits?

Ans. They are "antiscorbutic," laxative, and add variety and relish to the diet.

9. Of what food value are salads?

Ans. They are "antiscorbutic," supplying the body with easily utilized mineral and organic salts. If oil or meats are added, the salad may have a considerable caloric value. They are often laxative.

10. What foods do you eliminate in cases of diabetes? In cases of nephritis?

Ans. Diabetes: Sugar; sweets of all sorts; bread, biscuits, rice, oatmeal, cornmeal, sago, tapioca, arrowroot; potatoes, turnips, parsnips, green peas, beets, tomatoes, green corn; chestnuts; liver; all sweet fruits, pastry and puddings.

Nephritis: Coffee; all highly spiced foods; soups; fried and salted fish and meats; pork, peas, beans, gravies; fresh bread and cakes; potatoes; macaroni; tapioca, sago; pastry and ice cream.

11. How would you cook rice for an invalid?

Ans. Boil 2 cups of water with $\frac{1}{2}$ teaspoon of salt added. Wash 2 tablespoons of rice, and add slowly to the boiling water. Cover and boil until soft—about 20 minutes. Drain through a strainer and dry in oven for a short time. Serve with cream and sugar. (Pattee.)

12. Give your method of baking apples.

Ans. "Wipe and core apples. Put in a shallow dish with one tablespoon water to each apple; more may be added during cooking if necessary; put into the center of each apple two teaspoons sugar. Bake in a hot oven twenty to thirty minutes, or until soft; baste with the syrup every ten minutes. A little nutmeg may be added to the sugar, and a few drops of lemon juice to each apple. Care must be taken that apples do not lose their shape and break." (Pattee.)

13. Mention *three* ways of cooking eggs, suitable for a patient on a soft diet.

Ans. Soft boiled, steamed, poached.

14. What kinds of food would you give in cases of rachitis?

Ans. Nutritious foods, rich in proteids—not too much starch. Fresh milk, eggs, broth and simple soups, easily digested meats, orange juice; prime, fresh fruits, very sparingly.

15. What diet in general would you follow in nursing patients with nervous disorders?

Ans. A generous and nutritious diet, plainly prepared, so as to digest easily, and containing little or no meat. Oysters, clams, fish, chicken and most kinds of game, butter and eggs may all be allowed in moderation. Rich, made-up dishes, pastry, irritating fruits and excessively starchy foods must be avoided.

VERMONT BOARD OF REGISTRATION OF NURSES.

ANATOMY AND PHYSIOLOGY.

Examination at Montpelier, Vt., Nov. 13, 1913.

1. Describe the vascular system of the human body, naming principal organs and tissues.

2. Describe the mechanism of respiration, naming organs and tissues involved.

3. What and where is the pleura? Its function?

4. What is the difference in structure and function of arteries and veins? (a) Name largest artery.

5. Describe the digestive apparatus and name accessory digestive organs.

6. How does pleura differ from other tissues in the body?

7. What and where is the œsophagus? (a) How long is it?

8. How long is the alimentary canal of the human body? (a) Give subdivisions of the large intestine. (b) Small intestine.

9. What is the process of mastication and what is effect of same?

10. By what avenues are the waste products eliminated from the body?

11. Name special senses. (a) Location of each.

12. What is the diaphragm? (a) Where located? (b) Name organs immediately above and below.

Number each answer and letter each subdivision. Do not write the questions.—DR. GALE.

MEDICAL NURSING AND HYGIENE.

Examination at Montpelier, Vt., Nov. 13, 1913.

Answer 10 questions only.

1. Describe in detail three methods of taking temperature.

2. Define the terms toxin and antitoxin.

3. What is acute nephritis? Name two causes. Outline briefly the treatment.

4. Define diphtheria? State cause, two frequent complications and treatment.

5. Define massage and state four objects or purposes for which it is practised.

6. Draw fever chart illustrating typical case of typhoid fever.

7. Name four methods by which disease germs are spread.

8. Of what is air composed? How does it become contaminated and how again purified? Where is the purest air found?

9. (a) Name the essential qualities of

potable water. (b) What disease is most commonly attributable to impure water?

10. In nursing acute communicable diseases what precautions would you take to prevent (a) your own infection; (b) carrying the infection to others?

11. Describe in detail preparation for and method of giving a vaginal douche to a ward patient in bed, including all articles needed, quantity and temperature of the douche, etc.

12. What is the proper temperature of a patient's room or of a hospital ward, and how would you keep same at average temperature and provide for ventilation?

—DR. D. C. HAWLEY.

Have your answers to these questions ready for comparison with the answers to be given in a later number of the GAZETTE.

STERILIZATION OF MILK BY ELECTRICITY.

THE bacteriological department of Liverpool University has been conducting experiments to ascertain whether electricity can be satisfactorily utilized for sterilization of milk. The milk enters one end of a tripartite tube of definite size at a known fixed level, and during its passage through the tube is acted on by the electric current. Dr. Beattie, the city bacteriologist, has issued a report stating that this method of sterilization is more economical than, and free of some of the objections urged against the older method. Complete destruction of all coli and similar bacilli, resulted. As

these organisms are chiefly responsible for summer diarrhoea among children, the milk sterilized by this process is eminently fit for infantile use. The taste of the milk and its nutritive properties are not altered. The tests so far made on tuberculous milk proved that the tubercle bacillus can with certainty be destroyed. As a result of this report the Liverpool Infant Life Preservation Committee—at whose instance these experiments were made—contemplate installing electrical sterilization plant at their depot for treatment of all milk sold by the corporation.—*The Medical Officer.*

TECHNICALITIES.

ITEMS of value to nurses will be welcome to this column.

USE THE CATHETER.—Unconscious patients should be catheterized every eight hours.—*Od Quarterly*.

ORIGIN OF DISEASE.—95 per cent. of all diseases have their origin in the digestive canal.—*Charcot*.

TO REMOVE IODINE STAINS.—Tincture-of-iodine stains may be removed from clothing or the skin by using strong ammonia water.—*Int. Hosp. Record*.

BEDSORES.—Bedsore will be found to heal up nicely under the influence of the mild zinc ointment. Apply it three times a day on a soft white cloth.—*Od Quarterly*.

SCRUBBING THE FIELD OF OPERATION.—In cleansing and antisepticising a field of operation, always begin at about the center of the proposed incision and scrub outward in circles. In this way the dirty water and debris from the skin is washed away from the proposed field of operation, instead of being carried backwards and forwards from skin surface perhaps unscrubbed.—*Amer. Jour. of Surgery*.

INCIPIENT BREAST CANCER.—Do not be too sure that a small breast tumor is not cancerous because the patient is young. Such a small tumor even in the breast of a young virgin is sometimes scirrhus.—*Amer. Jour. of Surgery*.

REMOVING EGG STAINS FROM SILVER.—A pinch of table salt taken between the thumb and finger and rubbed on the spot with the end of the finger will usually remove the darkest egg stain from silver.—*Od Quarterly*.

RED LIGHT AND MILK.—But if even unsterilized milk is placed in a red bottle or in a bottle wrapped in red paper in the full sunlight it keeps perfectly good for ten hours.—*Scientific American*.

CAUSTIC POISONS.—In cases of poisoning with caustics there is always danger, apart from perforation by the stomach tube, that the introduction of large quantities of water may cause rupture of the damaged gastric wall. Hence only a few ounces of fluid should be introduced at a time, and these under low pressure.—*Od Quarterly*.

POST-OPERATIVE PNEUMONIA.—The "pneumonia" that occurs as a post-operative complication is quite different in several respects from primary lobar pneumonia and especially in the prognosis.—*American Journal of Surgery*.

SODIUM HYPOSULPHITE FOR IODINE STAINS.—To remove iodine stains from bacteriological instruments or the hands a strong solution of hyposulphite of soda is good and effective. The solution should be quite strong, and, after its application the solution should be rinsed off with warm water, and the stained article dried well.—*Od Quarterly*.

VINEGAR ON TENDER HANDS.—In operating upon septic cases, if for any reason gloves are not worn, it is a good precaution to dip the hands in vinegar, which, through the resulting smarting, will reveal invisible cracks and abrasions. These sensitive places can then be covered with collodion.—*Od Quarterly*.

TEA, COFFEE OR COCOA STAINS.—Borax is best. Pour boiling water through the stain, while it is wet, if possible, place some powdered borax on and pour on more water, then wash, boil and dry in the sunshine. Sunshine seldom fails to remove such stains as tea, coffee or scorch marks.—*Nursing Times*.

WARD TEMPERATURE.—It is an excellent plan to keep day and night four-hourly ward temperature charts. These should be kept charted up by the nurse in charge. By this means an irregularity on the part of the heating apparatus can at once be detected and remedied.—*Hospital*.

TO CLEAN WATCH CHAINS.—Gold or silver watch chains can be cleaned with a very excellent result, no matter whether they be matt or polished, by laying them for a few seconds in pure aqua ammonia; they are then rinsed in alcohol, and finally shaken in clean sawdust, free from sand. Imitation gold and plated chains are first cleaned in benzine, then rinsed in alcohol, and afterwards shaken in dry sawdust.—*Od Quarterly*.

BLOOD STAINS.—These should be soaked in salt and water for some hours, then wring out and rub in a fresh supply of salt and water. Next wash in the ordinary way, with soap and warm water, boil, rinse and dry in sunshine.—*The Nursing Times*.

LOCAL HEAT FOR A COLD.—For the first symptoms of cold in the chest, constriction, soreness, harsh cough, apply heat persistently, uninterrupted, for from two to four hours. Dry heat, if very early, and moist heat in the later stages. Heat always; cold never. Accept no other dictum.—*Od Quarterly*.